To dear Eva

from

Jan 19, 1948 Father

THE CANCER BIOPATHY

By Wilhelm Reich

DER TRIEBHAFTE CHARAKTER
Internationaler Psychoanalytischer Verlag, 1925. 132 pp.

DIE FUNKTION DES ORGASMUS
Internationaler Psychoanalytischer Verlag, 1927. 206 pp.

DER SEXUELLE KAMPF DER JUGEND
Sexpol Verlag, 1932. 152 pp.

CHARAKTERANALYSE
Sexpol Verlag, 1933. 288 pp.

MASSENPSYCHOLOGIE DES FASCHISMUS
2. Auflage, Sexpol Verlag, 1933. 292 pp.

DIALEKTISCHER MATERIALISMUS UND PSYCHOANALYSE
Sexpol Verlag, 1934. 60 pp.

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Abhandl. zur personellen Sexualökonomie, Nr. 3. Sexpol Verlag, 1935. 61 pp.

DER EINBRUCH DER SEXUALMORAL
2. Auflage, Sexpol Verlag, 1935. 155 pp.

DIE SEXUALITAET IM KULTURKAMPF
2. Auflage, Sexpol Verlag, 1936. 250 pp.

EXPERIMENTELLE ERGEBNISSE UEBER DIE ELEKTRISCHE FUNKTION VON SEXUALITAET UND ANGST
Abhandl. zur personellen Sexualökonomie, Nr. 4. Sexpol Verlag, 1937. 55 pp.

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Abhandl. zur personellen Sexualökonomie, Nr. 5. Sexpol Verlag, 1937. 50 pp.

DIE BIONE
Klinische und experimentelle Berichte, Nr. 6. Sexpol Verlag, 1938. 205 pp.

BION EXPERIMENTS ON THE CANCER PROBLEM. DREI VERSUCHE AM STATISCHEN ELEKTROSKOP
Klinische und experimentelle Berichte, Nr. 7. Sexpol Verlag, 1939. 30 pp.

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Orgone Institute Press, 1945. xxii + 328 pp.

THE SEXUAL REVOLUTION
Orgone Institute Press, 1945. xxvii + 273 pp.

THE MASS PSYCHOLOGY OF FASCISM
Orgone Institute Press, 1946. xxiv + 344 pp.

THE FUNCTION OF THE ORGASM
Orgone Institute Press, 1948. xxxvii + 325 pp.

THE DISCOVERY OF THE ORGONE

VOLUME TWO

THE CANCER BIOPATHY

WILHELM REICH

THE DISCOVERY OF THE ORGONE

ORGONE INSTITUTE PRESS
NEW YORK

VOLUME TWO

THE CANCER BIOPATHY

By
WILHELM REICH

Translated by
THEODORE P. WOLFE

ORGONE INSTITUTE PRESS
NEW YORK · 1948

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ORGONE INSTITUTE PRESS, INC.
157 CHRISTOPHER STREET, NEW YORK 14, N. Y.

PRINTED IN THE UNITED STATES OF AMERICA

Love, work and knowledge are the well-springs of our life.
They should also govern it.

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PREFACE

The present second volume of THE DISCOVERY OF THE ORGONE is the immediate continuation of the first volume, THE FUNCTION OF THE ORGASM. It is composed of a number of articles published between 1942 and 1945 in the *International Journal of Sex-economy and Orgone Research*. The compilation of these articles in book form shows orgone biophysics more clearly as the logical result of the relevant observations, experiments and work hypotheses. It will make it easier for the unprejudiced reader to convince himself that the discoverer of the orgone energy was a tool of scientific logic and consistency rather than a creator of "new theories." No human mind could think up the wealth of facts and interconnections presented in this book. In the process of discovering the cosmic orgone energy, my task was not that of creating theories. It was solely that of following the observations carefully, of verifying them by experiment, and of building the logical bridges in thinking which lead from one realm of functioning to another.

In this book, much of the previously published material is rearranged in order to avoid repetition and to emphasize the chronological order. A presentation of the errors connected with the "air germ theory" was added; also, for the cancer researcher, a presentation of the connection between classical and orgonomic cancer research. There is a brief note concerning the demonstration of the atmospheric orgone by means of the Geiger-Müller counter; an extensive presentation of this important finding was not possible because it was made only in the summer of 1947.

I trust that this volume is accessible to the reader without special training if he has acquainted himself with the principles of scientific research in general and with those of orgonomy in particular. Skipping the more highly technical parts will not interfere with an understanding of the whole.

The present volume comprises a work period of about 17 years,

from about 1930 to 1947. I limited the material to the essentials as a presentation of all the details would have made the book unreadable; there will be ample opportunity to present important facts omitted here.

Unfortunately, but understandably, this volume cannot give a complete presentation, simply for the reason that the orgone research done to date has inevitably left many gaps. There is no "system of thought" or a "new natural philosophy," but merely new facts and new connections between known facts. Where doubts remain, I have pointed them out specifically.

Orgone research today is far ahead of this book. Publication of the *orgonometric* results of the past few years had to be postponed, as well as that of a systematic discussion of *functional thinking*, the technique on which all observations, experiments and connections are based. The past 12 years have shown again and again that orgone research is not understood or is misunderstood by biologists and physicists because they do not see the new findings in the frame of thought of *energetic functionalism*. Instead, they try to comprehend them with classical *mechanistic* methods of thought; this is impossible. To the bacteriologist, say, a staphylococcus is a static formation, spherical or oval, of the size of about 0.8μ, reacting with blue to Gram stain. To orgone-biophysics, these characteristics are important, but not the essential thing. The name says nothing concerning the origin, function and place in nature of this blue coccus. To orgone-biophysics, that which the bacteriologist calls "staphylococcus" is an *energy vesicle* in the process of degeneration. Orgone-biophysics investigates the *origin* of the staphylococci from other forms of life and their *changes;* it examines them in their connection with the processes of the total biological energy of the organism; it *produces* them experimentally through degenerative processes in bions, cells, etc. This example is only to illustrate why the facts of orgonomy cannot be comprehended with the classical mechanistic and chemical methods and why, furthermore, a systematic presentation of the methods and the techniques of thought of orgonomy would be so important for an understanding of the orgone energy. But I must limit myself and can only hope that the

facts and functions presented here will speak for themselves, even though they may appear new and strange to the bacteriologist, biologist or medical man trained in the classical ways.

The natural processes presented here are difficult to understand without a knowledge of the *biophysical function of the orgasm.* If one wants to study animal species one must have a sufficient knowledge of geology. If one wants to study the natural laws of the cosmic orgone, one must have an exact knowledge of the function of the orgasm. Another requirement for one who works with the orgone energy is that his organ sensations must be relatively unimpeded. The emotional structure of the researcher of necessity tinges his observations and his thinking; that is, the organ sensation is a tool in his work. This is true of myself as well as any other person who works with orgonotic natural functions. True, the experiment must confirm—or refute—the observations and work hypotheses; but the manner in which experiments are thought of and in which they are carried out depend on the perceptions of the researcher. The sense perceptions and organ perceptions are decisive factors here. It would be erroneous to believe that experiments *alone* could yield new findings; it is again and again the living, perceiving and thinking organism which searches, experiments and draws conclusions. So much about the technique of functional thinking, in itself a wide and difficult field which in this book is only hinted at.

Our subject is serious and full of decisive consequences for natural science in general. For this reason, I have always let several years pass before publishing a new observation or an unusual experiment. I made it a rule not to publish a new fact until further new facts had confirmed it. It has already been admitted from many sides that orgone research does away with many old and erroneous concepts of nature; it is already understood in many places that, in orgonomy, the rigid boundary lines between the special sciences break down. He who works with the cosmic orgone must have sufficient knowledge in medicine, biology, sociology, physics and astronomy to follow the orgone functions in their diverse realms of functioning. Nature knows no boundary lines between specialized functions. My point of departure was

essentially *biopsychiatry;* the knowledge of human emotions and instinctual functioning plays a large role in orgone research. Biopsychiatric knowledge is primary not only to understanding the basic functions of the orgone, but also quite particularly to the human reactions to the existence of a universal cosmic energy. For, in the realm of living matter, orgone energy functions as "biological energy," as the energy of our emotions. This interrelationship is of serious consequence.

Because for a decade I studied the biological functions of the orgone energy in the cancer biopathy, it is the axis around which the orgonomic subject of this volume revolves. It may be regarded as a triumph of biopsychiatry that it was biopsychiatry which opened an avenue of approach to an understanding of *biological cell energy.* With that, an access was also provided to the atmospheric orgone energy. This, the presentation of the facts will clearly show. It is gratifying that it was the *sex-economic* branch of biopsychiatry which succeeded in solving the riddle of the cancer disease and pointing to a method of preventing it. I am fully aware of the responsibility involved in these statements, and I must convey to the reader my feeling of the seriousness of the situation. The gravity of the subject of this book calls for thoughtfulness in the reception and the criticism of my findings. In brief:

The cancer disease, the basic mechanism of which is progressive shrinking of the life apparatus, becomes readily understandable if one overcomes one's resistance to accepting the following gigantic facts:

1. We must give up the air germ theory and recognize "*endogenous infection.*"

2. We must fully accept the role of emotions in organic diseases.

3. We must acknowledge the development of living, spontaneously moving substance from other living or from non-living substances, even from free orgone energy. In other words, in dealing with cancer, we are directly confronted with the problem of *biogenesis.*

4. In dealing with cancer, we must put *sexual pathology* in the center of our medical efforts, no matter how much hated and eschewed sexual pathology is.

5. If we wish to comprehend the cancer disease in a simple fashion, we must acknowledge the existence of a basically new cosmic energy, which I called orgone, and which is present everywhere and is governed not by mechanical but functional laws.

Each one of these five points is in itself enough to arouse scepticism in a serious natural scientist. I can assure the reader that I let years pass before I dared present the wealth of new findings and connections. Dr. Walter Hoppe was right when he wrote me once that the greatest difficulty in my work consisted in that *too much* had been discovered.

In true science, one has to acknowledge facts at the risk of breaking one's neck. I could not escape that risk if I was to do justice to the discoveries made. As time went on, the gigantic nature of the findings seemed less terrifying to me. I believe that the reader also will lose much of his fright as he acquaints himself with the following facts:

1. The breaking down of the sharp boundary lines between the various specialties in natural science facilitates work in medicine and research. In spite of all variations, nature is a unitary whole. This unity and simplicity is reflected in the simplicity of the orgone functions when we work with them. I think the orgone energy is much less frightening and much less complicated than a single apparatus for dropping bombs.

2. The more familiar one becomes with the orgone functions the more one feels "at home" with them. The findings provided by this work relieve one of the constant pressure one experiences in working say, with cancer, without the knowledge of the biological energy. After a few years one can no longer see how one was able to work without this knowledge. Choreatic movements or epileptic fits no longer are riddles. Such processes become simple and understandable.

3. One learns to meet human irrationalism, to understand what goes on in people who fall victim to mysticism or the emotional plague.

4. It is a great relief to understand the religious individual better, to know that there is an omnipresent and all-pervading cosmic force, Newton's "ether," the "God" of all ages and peoples,

a force which now can be made visible and can be measured by means of the thermometer, the electroscope and the Geiger-Müller counter.

5. Finally, it is a great relief to be able to give the medical term "disposition" a concrete content, to learn to understand why one individual suffers from frequent colds while another does not; why only certain individuals fall victim to an epidemic and others not; why one individual dies of cancer or hypertension and others not; and what differentiates biologically a lively from an unalive child.

In brief, the enlightenment which one owes to the knowledge of the orgone energy more than compensates for the fear one experiences when the great mysteries of nature reveal themselves.

I should like to add a few words to the co-workers who have made the study and use of the orgone energy their life-work.

The newness and the challenging character of our work require certain new attitudes toward the environment and force us to relinquish certain common techniques in our intercourse with it if we are to fulfill our task as orgone researchers. It is not personal interest but the interest in the recognition of the cosmic energy for the benefit of the general public which forces me to make the following remarks:

In our intercourse with the professional as well as the lay world, we experience sharp hostility and dangerous attacks on our personal and professional integrity. As psychiatrists, we understand the irrationalism of these attacks and know their sources. They have nothing to do with the personal character of this or that orgone researcher or orgone therapist. They are met, in a *typical* way, by myself as well as others who live and work far from my laboratory. Publicly, we cannot use our knowledge of the motives of irrational actions in a *personal* manner. We cannot tell a physicist who tries to interpret away the orgone functions in a neurotic manner what really motivates him. We can only make these motives known in a general way but not use this knowledge in a personal way. All we can do is to ask ourselves whether a certain attack is rational or irrational. *Irrational attacks should not be answered under any circumstances.* We fight them through the disclosure of irrationalism in human life. Time usually takes care

of them, even though occasionally they take on dangerous forms. We know that the average human of today fears nothing as much as the *knowledge* of his biological nature. At the same time we know that he longs for nothing as much as for the *fulfilment* of his biological nature. We meet the fear of knowledge and the longing for fulfilment at the same time. We have to look for the rational in the irrational, must understand it and present it without hatred or indignation. As time goes on, the rational will win out. Unfortunately, I have no advice as to how one is to protect oneself against irrationalism which is dangerous to life; neither court procedures nor name-calling will help here.

However, there is a tried means of *forcing* rational behavior in the intercourse with lay and professional people: *We delegate no authority in questions of orgone research unless the critic can show that, over a long period of time and thoroughly, he has made himself acquainted with our findings.* Our science can be judged only from the standpoint of its *own* methods and techniques of thought, and not from any other. This is a strict law in scientific intercourse, valid wherever scientific work is done. We expect and wish for criticism, but only *immanent* criticism.

If then, an abstinent court psychiatrist, or an orthodox cancer researcher, or even a "free lance journalist," presumes to damn our work, because he does not understand it, or because he feels his philosophy of life threatened, or because his political party feels threatened, we keep silent. *We do not participate in any irrational discussion or brawl.*

It is customary, when one has made a discovery, to have it confirmed by certain "authorities," to ask for such recognition, and to use all kinds of tactics to get it. It is also customary to try to get into the daily papers as soon as possible. All this does not become us who work with deadly serious things. If we work honestly and conscientiously, stick to the facts, and do not give in to any temptation to compromise on central findings, such as the function of the orgasm, then we will sooner or later gain general confidence. There are few things in the world which it needs more urgently than a knowledge of the orgone functions within and without the organism.

We must not concede authority where there is no objective

authority in questions of the orgone. But *we must delegate responsibility*. Undoubtedly, it is the responsibility of a cancer hospital for millions of human lives to operate with the orgone energy. It is the responsibility of every individual physician who has observed the therapeutic effects of the orgone to advocate these facts professionally, instead of avoiding them or waiting for the opinion of "authorities." It is the responsibility of every individual who enjoys the therapeutic effect of the orgone energy to help his fellows where possible. It is the responsibility of a writer not to impede the life-saving effect of the orgone by scandalous and sensational writeups in the daily press. He must know that indirectly he kills people when he agitates against us. Finally, it is the responsibility of the government of this or that country whether and how soon the orgone energy is made available to the general public, economically and administratively. We do our duty in every way and as best we can. We work hard, over decades; we sacrifice money and leisure; we act as decently and honestly as we can. We publish our findings in a responsible manner. More we cannot do. *The rest is up to the public.* If the public tolerates defamatory articles, lies and distortions, it is really the public which is hurt and not this or that orgone therapist. I wish I did not have to say these things, but it is my duty not to pass them over in silence.

At the same time we must understand that *serious* natural science needs a great deal of time to orient itself in our field, new as it is. It is to the damage of human welfare that the ignorant and incompetent can so easily and quickly write articles and place them, that the political way of living in our days makes the publication of smear articles so much easier than that of vitally important facts. True, we must admit that important facts take shape more sharply in the struggle with irrational human reactions. At the same time it remains sadly true that the rational takes so much time to establish itself in our social life.

I would like to express my gratitude to all the friends who, through hard years, helped me to build the framework which this book describes. I could mention many and important names. Those who feel at home in our work will understand why I do not

mention them by name. Some of them asked me themselves not to do so.

My publications show clearly that I know very well how much I owe to the great pioneers of natural science, that without their labor the discovery of the cosmic orgone energy would have been impossible. I have again and again emphasized the continuity and mutual interdependence of all the branches of vitally necessary work. I wish to point out that the many findings which mechanistic cancer research has so assiduously assembled were indispensable for my new comprehension of the cancer biopathy, in spite of the fact that the orgonomic and the classical cancer theories differ so greatly and contradict each other on many points. A great many cancer researchers know already that the cancer problem *is solved*, and that this solution required the discovery of the orgone and the elucidation of biogenesis.

On the other hand, we have to refute unjustified claims of priority such as were made with regard to psychosomatic medicine after the publication of THE FUNCTION OF THE ORGASM (1942). The orgasm theory as the foundation of psychosomatic knowledge is far older (1923) than any of the other concepts derived from psychoanalysis. If, in these other concepts, the function of the orgasm, the core of psychosomatic processes, is so assiduously avoided, we can only marvel at the consistency with which the main thing is bypassed. The ones who are harmed by this are again only all the patients.

I do not publish this book without a great deal of concern. The core of this concern is the expectation of so many readers of our literature that now a cure-all for cancer has been found. This I must strictly refute. It is true that the riddle of the cancer disease has been made fully accessible by the discovery of the orgone. But it would be erroneous to believe that now every cancer patient can be saved. It will take long, hard, cooperative work before we will know how much the orgone energy can do in this or that case of cancer. But a beginning has certainly been made.

Orgonon, September 1947 W. R.

Chapter I

THE FUNCTION OF TENSION AND CHARGE

1. The Function of the Orgasm

Those who are familiar with Volume I of The Discovery of the Orgone know of the important event which, in 1933, represented the turning point in our research: *the discovery of the biological function of tension and charge*. I should like to give here a brief résumé of these developments.

Clinical investigation had shown us that the function of the orgasm is the key to the problem of the energy in the neuroses. Neuroses are the result of a stasis (damming-up) of sexual energy. This stasis is caused by a disturbance in the *discharge* of sexual energy in the organism. It makes no difference whether this fact is perceived by the ego or not; nor does it matter whether the psychic apparatus misinterprets this process in a neurotic manner, or what kind of ideologies the individual develops around the disharmony in his energy system. Everyday clinical experience leaves no doubt: *the elimination of sexual stasis through orgastic discharge eliminates every neurotic manifestation.* The difficulties involved in this therapeutic task are chiefly of a social nature. It is necessary to point out these simple basic facts again and again.

Sex-economy had known for a long time that the orgasm is a *fundamental biological phenomenon;* fundamental because the orgastic energy discharge takes place at the very roots of biological functioning. This discharge takes place in the form of an involuntary contraction and expansion of the total plasma system. Like the respiratory function, it is a basic function of any animal system. Biophysically speaking, it is impossible to distinguish the total contraction of an ameba from the orgastic contraction of a multicellular organism. The outstanding phenomena are *in-*

tensive biological excitation, repeated expansion and contraction, ejaculation of body fluids in the contraction, and rapid reduction of the biological excitation. In order to comprehend these phenomena as biological functions, we had, of course, to rid ourselves of the lascivious reactions which usually accompany any occupation with sexual functions and autonomic life functions in general; these very reactions, in the form of neurotic attitudes and symptoms, form an important object of our biopsychiatric work.

In its quickly alternating expansions and contractions, the orgasm shows a function which is composed of tension and relaxation, charge and discharge: *biological pulsation.*

Closer investigation reveals the fact that these four functions appear in a definite four-beat: the mechanical tension, which shows itself as sexual excitation, is followed by a bio-energetic charge of the periphery of the organism. This fact was unequivocally demonstrated by measuring the bio-electric potentials occurring with pleasurable excitation of the erogenous zones. When tension and charge have reached a certain degree, there occur contractions of the total biological system. The high peripheral charge of the organism is *discharged.* This is seen objectively in the rapid decrease of the bio-electric skin potential; it is felt subjectively as a rapid decrease in excitation. The sudden shift from a state of high charge into that of discharge is called the "acme." The discharge of biological energy is followed by a mechanical relaxation of the tissues through a flowing back of body fluids. That we are actually dealing with a discharge of energy is shown, among other things, in the fact that for some time after the discharge the organism is incapable of sexual excitation. This is the condition which, psychologically, we call "gratification." The need for gratification—or, in biophysical terms, *for the discharge of the surplus energy in the organism by way of fusion with another organism*—makes itself felt at more or less regular intervals. These intervals vary from individual to individual as well as from species to species. They usually become shorter in the spring; in animals, one finds the phenomenon of rut or heat, a concentration of this biological need in certain seasons, predominantly in the spring. This fact points to a close connection between the function of the orgasm and an energy function of a cosmic nature. The orgastic function, together with the known effects of the sun on living organism, is one of the phenomena which shows the living organism to be a part of non-living nature.

Thus, the function of the orgasm is expressed in the four-beat: MECHANICAL TENSION→BIO-ENERGETIC CHARGE→BIO-ENERGETIC DISCHARGE→MECHANICAL RELAXATION. We shall call it for brief the *function of tension and charge.*

We know from earlier investigations that the function of tension and charge is characteristic not only of the orgasm. It applies to all functions of the autonomic life system. The heart, the intestines, the urinary bladder, the lungs, all function according to this rhythm. *Cell division,* also, follows this four-beat. So does the motion of protozoa as well as metazoa. Worms and snakes show this movement according to the formula of tension and charge particularly clearly, in the movements of their parts as well as their totality.

Thus it is obvious that there is *one* basic law which governs the organism as a whole as well as its autonomic organs. The total organism contracts in the orgasm just as does the heart with every pulse beat; the medusa as a whole contracts just as does the vacuole in a protozoon. This biological basic formula comprehends the essence of living functioning. *The orgasm formula shows itself to be the life formula as such.* This corresponds exactly to our previous formulation that the sexual process is the productive biological process per se, in procreation, work, *joie de vivre,* intellectual production, etc. To recognize or to refute this formulation is to understand or to reject orgone biophysics.

The mechanical tension of organs through tumescence is easy to understand: it consists in taking up fluid and in a separation of the particles in the biological colloid. Conversely, mechanical relaxation consists in giving off fluid and mutual rapprochement of the particles. The question as to the *nature* of the process of charge and discharge presents a more difficult problem. The possibility of measuring the electrical potentials could easily lead us to discard the whole problem by calling the process one of "electrical charge" and "electrical discharge." After all, electrical energy was

measured in the contracting muscle and the "electric eel"; one is even able today to measure the electrical "brain waves." In reporting on my bio-electrical experiments (1934-1936), I gave the changes in potential occurring in pleasure and anxiety in millivolts.

2. THE POSTULATE OF A SPECIFIC BIOLOGICAL ENERGY

Is the specific biological energy identical with electricity? This is not as simple a question as it may appear. Certainly it would be highly satisfying if we could express the function of the orgasm in the familiar terminology of physics. The organism, then, would be nothing but a "particularly complicated electrical machine." It would be very pleasant and convenient to explain the reaction of rheumatic people to weather changes by stating that the "body electricity" was being influenced by the "electric" charges in the air. The attempt has also been made to apply the laws of iron magnetism to the living organism. We say that a beloved person has a "magnetic" attraction, that excitement "electrifies" one. We shall soon see that such analogies are erroneous. In earlier publications, I spoke of "*bio-electricity,*" following the usual terminology. No doubt, there is electricity in the organism, in the form of electrically charged colloid particles and ions. Colloid chemistry as well as muscle physiology operate with it. Muscles can be made to contract by the application of an electric current. In combing our hair, we get "electric" sparks.

Nevertheless: *There are a number of phenomena which are completely at variance with the theory of electromagnetic energy.*

First of all, the effects of bodily "magnetism." Many physicians and lay therapists use these magnetic forces in a practical way. But to us, it is not conceivable that these forces which emanate from organic, colloidal, non-metallic material should be magnetic forces. We shall provide experimental proof for the fact that the energy we are dealing with in the living organism is not identical with iron magnetism.

If a faradic current is applied to our body, we experience it as alien to the body, as not "organic." Electrical energy, even in the smallest quantities, produces only disturbances of normal functioning if applied to the muscles, i.e., they show unnatural, uncoordinated, "senseless" contractions. It is altogether impossible to produce, by applying an electrical current, an organic movement which would have the slightest resemblance to the everyday living movements of whole muscle systems or functional muscle groups. The electrical current produces a movement in which the essential characteristic of biological energy is lacking: the movement of a *group* of organs in a *coordinated, functionally meaningful form.* On the other hand, the *disturbances* of biological functioning by the electrical current show distinctly the character of electrical energy. The resulting movements are rapid, jerky, and angular, exactly like the oscillographic phenomena which one obtains by rubbing an electrode on metal (*cf.* THE FUNCTION OF THE ORGASM, *1st ed.*, p. 348, fig. 7, *2nd ed.*, p. 308, fig. 7).

If an electric current is applied to a muscle-nerve preparation, it is not expressed as such in the resulting movement. If it were, the smooth muscle would contract just as quickly as the striated muscle. In reality, the smooth muscle does not contract like the striated one, but in the form of a slow, wave-like movement which is characteristic of the smooth muscle. That is, an unknown "something" is interpolated between the electric stimulus and the muscle action. It is only induced by the electric stimulus and manifests itself as a movement which is accompanied by an action current. But this "something" is not electricity.

Our own sensations tell us distinctly that the emotions (which undoubtedly are manifestations of our biological energy) are something basically different from the sensations caused by an electric shock. Our sense organs fail completely to register the electromagnetic waves though the atmosphere is full of them. We feel nothing in the proximity of a radio transmitter. We do not react to the proximity of a high-tension wire the way a radio apparatus does. If our life energy were electricity, the fact that we react to the wave-lengths of visible light but not to the other wave-lengths would be incomprehensible—since our perceptions are an expression of this life energy. We are insensitive to the electrons of an Xray machine as well as to radium rays. Electrical energy does not convey a biological charge. Thus far it has been

impossible to express the potency of vitamins in electrical measurements, although there can be no doubt that they contain biological energy. These examples could be multiplied indefinitely. One might also ask how it is possible that our organism does not get destroyed by all the electromagnetic fields which surround it.

True, we can influence sensitive voltmeters by touching them, but the magnitude of this reaction is so infinitesimal—compared with the energy quantities in the organism—that we cannot see any connection.

We are dealing here with gigantic contradictions, contradictions which are insoluble within the framework of the known forms of energy. They have been occupying the minds of biologists and natural philosophers for a long time. Attempts were made to bridge the gap with concepts which were to make comprehensible the specific *living* functioning. Such attempts were made primarily by the opponents of mechanistic materialism, by the vitalists. Driesch, e.g., tried to solve the problem by introducing the concept of *entelechy*, a vital energy pertaining to living matter and governing it. As this energy was not tangible and measurable, his concept was doomed to lead into metaphysics. Bergson's *élan vital* also took into account the incompatibility of the known forms of energy and living functioning. His *force créatrice* represents an explosive function of matter, manifesting itself most clearly in living functioning. Bergson's hypothesis was directed against mechanistic materialism as well as teleological finalism. It comprehended correctly the basically *functional* character of the living but it lacked empirical substantiation. The force in question was neither measurable nor tangible or otherwise capable of being influenced.

The well-known German physiologist Pflüger, on the basis of the function of cyanide, assumed a connection between life energy and fire. His assumption was correct. Prominent biologists, as for example Kammerer, postulated the existence of a *specific biological energy* which would have no immediate connection with electricity, magnetism and other known forces.

If I should . . . give a scientific credo which as yet is impossible of proof, I must say: the existence of a *specific life force* seems highly

probable to me! That is, an energy which is neither heat, electricity, magnetism, kinetic energy (including oscillation and radiation) nor a combination of any or all of them, but an energy which specifically belongs only to those processes that we call "life." That does not mean that this energy is restricted to those natural bodies which we call "living beings"; it is present certainly in the formative process of the crystals. Perhaps, for this reason, it would be better to term it "formative energy" instead of life energy. But this energy is nothing "supraphysical," although it is unlike any of the known physical energies; it is no mysterious "entelechy" (Aristotle, Driesch), but a genuine, natural energy; only, as electrical energy is linked up with electric phenomena, chemical energy with chemical processes, so is this energy linked up with phenomena of life and of the development and change of forms. It certainly follows the law of the conservation of energy; it is convertible into other forms of energy as, for example, heat is converted into kinetic energy and vice versa. (Kammerer, ALLGEMEINE BIOLOGIE, p. 8).

Kammerer had been led to the problem of a "formative life energy" by his experiments on the heredity of acquired characteristics. The concepts of "inherited substances" and "genes" held dear by the heredity theoreticians only obscured the problem of living functioning, as if devised for the very purpose of blocking any access to the problem. Like a pyramid put on its tip, their theory consisted of a heap of hypothetical contentions, based on an extremely small basis in fact, and a doubtful basis at that. One only has to remember the unscientific, unwarranted and moralizing consequences drawn from the famous "family Kalikak." In reading hereditary hypotheses one has more the impression of treatises on ethics than of science. The living function gets smothered in a heap of mechanistic hypotheses. These theories finally degenerated into the disastrous Hitlerian theory of race.

With the vitalists, the living became a mysterious ghost-like thing, with the mechanists a lifeless machine. With the bacteriologists, there is, for each living organism, some special germ "in the air" which as yet nobody has seen. In the second half of the 19th century, Plouchet undertook the laborious task of examining the correctness of this theory. Pasteur showed experimentally that

liquids which have been exposed to high temperatures contain no living germs. If he found living organisms, he ascribed their presence to air infection. In his GESCHICHTE DES MATERIALISMUS, Lange criticizes Pasteur's interpretation and points to Plouchet's experiments. Plouchet passed great quantities of air through water and then examined it. He invented a special apparatus in which air was blown against glass plates on which the dust particles were deposited. He then examined the deposited dust. He carried out these experiments on glaciers in the Pyrénées, in the catacombs of Thebes, on land and on the sea in Egypt, and on top of the cathedral of Rouen. He found all kinds of things, but only extremely rarely a spore of a fungus or a dead infusorium. Pasteur's refutation of the primitive theories of spontaneous generation has been thoroughly misunderstood. There was a taboo against asking the question as to where the *first* germs of life came from. In order not to come into conflict with the assumption of a "Divine Creation," one took recourse to a plasmatic substance which was supposed to reach our planet from the universe.

None of these schools was ever able to penetrate to the functional problems of the life process or to achieve a connection with experimental physics. The living continued to be an incomprehensible, intangible mysterious something, a special preserve of Divine Providence, like an island in the gigantic field of experimental natural science.

Nevertheless, the sprouting of every plant, the development of every embryo, the spontaneous movement of every muscle and the work done by every biological organism daily demonstrate the existence of gigantic energies governing the working of the living substance. *"Energy" is the capacity to do work.* There is no known energy that could compete with the work of the total life apparatus of our planet. The energies which achieve this work can derive only from *non-living nature* itself. They have remained a closed book to science for thousands of years.

What is the block that kept humans from the comprehension of this energy? Freud's discovery of the function of sexual repression was the first breach in the wall which separated us from a com-

prehension of the living; the understanding of the manifestations of the unconscious and repressed sexual life was the first step. The second step was a correction of Freud's theory of the unconscious: *The repression of the instinctual life is not a natural phenomenon; rather, it is a pathological result of the suppression of natural instincts, in particular, of genital sexuality.* An organism which uses most of its energy for keeping living nature hidden in itself must of necessity be incapable of comprehending the living outside of itself. The central manifestation of the living is the genital sexual function. This is what life owes its existence and continuation to. A society of humans which has outlawed the most essential manifestation of this function and has made it unconscious is incapable of guiding the vital functions in a rational manner; they can express themselves only in distorted, pornographic forms. It was only the mystics who—far removed from scientific insight—always kept in contact with the function of the living. Since, thus, the living became the domain of mysticism, serious natural science shrank from occupying itself with it. The biological and physiological literature shows no trace of an attempt to understand the autonomic movement such as it is expressed, e.g., in the movement of a worm. It is too reminiscent of the sexual acts in the animal world. Thus, there is mysticism on the one hand, and mechanistic biology on the other. At the same time, the force of religious feelings in itself points to the existence of a powerful something which the humans, though feeling it, are unable to put into words or to govern. Religion, also, has mystified the living.

The whole problem comes within the realm of natural science only if and when we have an energy function which is measurable and capable of being influenced, which makes the basic functions of the living comprehensible and, at the same time, does not come into conflict with physics.

The functions of the living show that such a specific biological energy would have the following characteristics:

1. It would be basically different from electromagnetic energy and yet have a relation to it.

2. Assuming the origin of the living from the non-living, it would have to exist in non-living nature, independently of the living organism.

3. It would have to explain satisfactorily the relationship between living organisms and non-living nature (respiration, orgasm, nutrition, etc.).

4. Contrary to galvanic electricity, it would function on *organic material* which is a *non-conductor* for electricity, and animal tissues.

5. Its function could not be restricted to isolated nerve cells or cell groups, but would permeate and govern the *total* organism.

6. It would have to explain, in a simple way, the pulsating basic function of the living, *contraction* and *expansion*, as it is expressed in respiration and the orgasm.

7. It would express itself in the production of heat, a characteristic of most living organisms.

8. It would definitely explain the sexual function, i.e., it would make sexual attraction understandable.

9. It would explain why the living organisms have not developed an organ for electromagnetism.

10. It would help to explain the difference between protein that is dead and protein that is alive; that is, it would explain what has to be added to the chemically complicated protein in order to make it *alive*. It would have the capacity of *charging* living matter, i.e., it would act in a *life-positive* sense.

11. It would have to show us the mechanism of the symmetry of form development, and what is the function of form development in general.

12. It would finally enable us to understand why living matter is found only on the surface of the earth's crust.

These questions are nothing but the indispensable framework for any discussion of biogenesis and of biophysical problems.

Chapter II

THE ORGONE ENERGY VESICLES (BIONS)

EXPERIMENTAL GROUNDWORK FOR AN UNDERSTANDING OF THE CANCER BIOPATHY

The orgone energy was discovered in a bion culture. Thus, I shall have to begin this presentation by a description of those orgonotic phenomena which take place at the borderline between living and non-living matter.

The functional relationship between the bions and the atmospheric orgone makes it imperative to present the orgone functions in bionous matter *before* the presentation of the actual discovery of the orgone.

It is difficult to determine the date of the discovery of the orgone. Such orgonotic functions as attraction, penetration, pulsation and lumination had already been observed between 1936 and 1939 and studied in various bion preparations. Yet, at the time of these observations, I was unaware of the fact that I was dealing with manifestations of the specific biological energy. The experiments with bion cultures led to the discovery of the orgone in SAPA bions in January 1939 and in the atmosphere in July 1940. It was only after extensive work on the purely physical functions of the orgone energy (1939-1941) that I understood the observations made since 1936 in bions and bion cultures. The presentation in my book, DIE BIONE (1938), was still based entirely on traditional bacteriological and biologistic concepts. The later knowledge of the orgone functions led to many corrections. For example, I used to believe that the cultures of cocci and bacilli which develop from bions represented a higher developmental stage than the bions; later I learned that, on the contrary, they result from a *degeneration* of the bions into biologically sterile forms no longer capable of further development. The direct developmental continuation of the bions leads to integration into

protozoa. Staphylococci, streptococci, T-bacilli and rot bacilli are the result of a *degeneration* of living orgonotic plasma.

The following presentation of the bion experiments is entirely determined by the knowledge of the atmospheric orgone; thus, it is made no longer from a biologistic, but from a functional energy point of view. Such errors and corrections are inevitable if one works in uncharted territory.

"Bions" are microscopically visible vesicles of functioning energy. The term "bion" means that the vesicles, into which all matter disintegrates if made to swell, are transitional forms from non-living to living matter. *The bion is the elementary functional unit of all living matter.* It carries a certain amount of orgone energy, which makes it function in a specific way biologically. It is a *unit of energy,* consisting of a membrane, liquid content and an amount of orgone energy: *"orgone energy vesicle."* In the following pages, I shall review the observations and experiments which have led to such far-reaching conclusions.

1. THE VESICULAR DISINTEGRATION OF SWELLING MATTER (PA BIONS)

Carbon is the substance which, together with oxygen, nitrogen, hydrogen and water, forms the basis of the infinite number of organic compounds as well as of living matter. Let us leave out of consideration the well-known chemical reactions and simply observe a bit of carbon with a good microscope equipped with apochromatic lenses. All observations were made with Reichert microscopes ("Z-Mikroskop") which allow a magnification of about 5000x. The delicate biophysical processes like expansion and contraction, vibration, radiation bridge, etc., can be observed only at a magnification of over 2000x and are best seen at 4000x. It is not a matter of visualizing finer structural details, but *movement.* For this we can use blood charcoal (in my experiments that made by Merck was used) or ordinary soot. Since the combustion of any organic substance results in carbon, its derivation makes no difference.

To begin with, we observe the carbon particle in a dry state at a magnification of about 300x. We see a black irregular body without motion. In the dark-field we see an essentially striated structure, interspersed with some vesicular formations. Where the striated structure and the vesicles meet, the light is refracted strongly.

Coal particle, dry

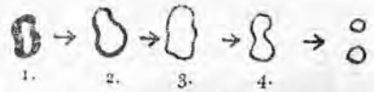


Fig. 1. Development of a carbon bion

1. Thick wall of carbon, inelastic
2. Increase in fluid content, swelling
3. Membrane thinner, elastic; inside blue, vibrating
4. Coal bion in the process of segmentation

We then use a magnification of about 2000x (objective 80x, eyepiece 16x, inclined binocular tube which, in the Reichert microscope, increases the magnification by 50%). The striated and vesicular structure is now more distinct. There is no trace of motion.

We add a drop of ordinary water and observe again at 300x, then at 2000x. There is hardly any change. There is still no motion, except perhaps for an occasional round or irregular particle moving across the field; their size is rarely over 1 μ. On the whole, the field looks "dead." We see no contraction or expansion.

Now we put a bit of fine carbon dust into a test tube with water. Part of the dust sinks to the bottom, part of it remains on the surface. The water itself remains clear; no colloidal solution is formed. The preparation is *not* sterile. Each consecutive day we take a drop of the fluid and examine it microscopically. We want to find out what functional changes take place in the carbon. It takes weeks before we observe a change. The individual spherical bodies

which show some slight motion become somewhat more numerous. In the dark-field, the larger coal particles, very gradually, show an increase in the number of round bodies within them. But the whole picture remains unalive. Even after months, the picture is essentially unchanged. We are struck by the fact that there are hardly any air bacteria (the test tubes are kept closed with a cotton plug). Macroscopically, the fluid is unchanged; it is still clear.

This is the control experiment. The experiment, that of *producing coal bions*, takes place as follows:

Now we work with all sterile precautions. All fluids are autoclaved at 120° C., all dry substances and tools are dry sterilized at 180° C.

We prepare test tubes with 50% bouillon and 50% 0.1n KCl solution which are autoclaved. Then we heat some coal dust on a spatula tip in a gas flame to white incandescence. In this incandescent state it is put into the sterile fluid. The fluid becomes black immediately; only the heaviest coal particles sink to the bottom, while the lighter ones remain suspended. In contrast to the control experiment, we have obtained a *colloidal solution*. In the course of half an hour, the black turns into gray. For several (3 to 6) days, the solution remains colloidal, then it becomes clear; all particles have sunk to the bottom.

Immediately after making the preparation, we take a drop, under sterile precautions, and study it under the microscope, again first at 300x, in ordinary light and dark-field, then at 2-3000x. The picture is entirely different from what we saw in the control preparation.

The structure of the coal particles is predominantly vesicular. Upon continued observation, we notice that small vesicles of about 1 μ diameter detach themselves from the margin of the larger particles and move about freely in the field. In successful preparations, one notices motility at the margins of the particles in the form of expansion, contraction and vibration. If we observe long enough, we see how the small particles undergo a change before our very eyes. At first they appear "rigid," with a thick and

black membrane. Gradually, the membrane becomes thinner. On the inside of the particle, we notice increasingly a *blue* or blue-green shimmer. The vesicles become tauter and show more motility inside. Many of them show an undulating vibration of their contents. The thinner the membrane becomes, the more intense becomes the blue glimmer and the more vivid the motions. Soon—the same day, more distinctly the following day—we see movements of *expansion and contraction*. Nobody who has closely studied these preparations has had the slightest doubt as to the living character of the movements. One can distinguish movements from *place to place* and *internal* movements of the contents, displacement of the blue color and of the intensity of the light phenomena, protrusions and retractions of the content: *the vesicle pulsates in an irregular rhythm.*

We send a galvanic current of about 0.2 to 0.5 M.A. through the preparation. The vesicles move toward the cathode, i.e., they are positively charged. (The vesicles in the control preparation are cataphoretically immobile or only rarely and slightly mobile). After several days, when the particles are no longer in colloidal suspension, the cataphoretic phenomena also become weak or disappear. That means that the charge of the vesicles is a prerequisite for colloidal suspension and for motility, as Pauli already had assumed. It is also a prerequisite for the formation of cultures (*cf.* DIE BIONE, p. 54 ff.).

Experiments with biological stains (Gram, carbol fuchsin) show the following. In the control experiment, with plain carbon dust, the particles remain black: unprepared coal does *not* react to biological stains. The *coal bions*, on the other hand, immediately react *positively* (blue with Gram stain). It can be observed, furthermore, that only those particles react which have already undergone a certain bionous development (thin membrane, increased fluid and blue color inside) while the undeveloped particles react neutrally like those in the control preparation.

We observe the stained preparation at 3000x with oil immersion and find that most of the blue vesicles, which previously showed a variety of shapes, have assumed a spherical shape. There

is a striking finding: in addition to the large vesicles of about 1 μ, we find much smaller, *red* bodies which at 300x were not visible. The smallest among them are at the borderline of microscopic visibility, about 0.2 μ long. They are found in groups around the larger, round and blue vesicles and around unstained crystals. They are elongated, with a point at one end, like a small lancet. In the fresh preparation we could not see them, but as we shall see, they can be found alive in other bion preparations. (*Cf.* fig. 26, p. 387.)

As became clear only after extended experimental investigations, these Gram-negative bodies are of extreme importance. They are the so-called T-bacilli which play such an important role in cancer. More about this later.

The bions, then, are biologically active forms, for—in contrast to the substance from which they originate—they react to biological stain.

There are other specifically biological reactions of the bions. Non-living substances, examined by fluorescent microscopy, always show nothing but their own individual color; for example, coal black, sodium chloride yellow, etc. The fluoroscopic examination of the coal bions, however, shows them to be not black but *blue*, just as a culture of staphylococci or any organic tissue. This is another proof of the biological character of the coal bions.

Before investigating other characteristics of the bions, we must answer the question whether the blue vesicles develop only from carbon or from other substances also. The basic question as to the nature of biological energy in non-living matter would be easy to answer if it were found in carbon only. But it is more complicated than that. The more substances one examines, the more inevitable becomes the following conclusion: *All matter, if heated to incandescence and made to swell, consists of or disintegrates into blue vesicles.* For example:

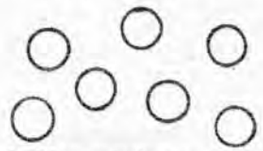
Cooked foodstuffs. Muscle, when cooked, largely loses its striated structure and consists of blue, moving vesicles. The same observation can be made in any kind of vegetable. The size and

shape of the vesicles may vary, but the content regularly shows a blue glimmer.

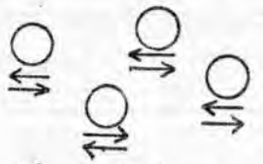
Egg yolk consists of individual blue vesicles which sometimes are found in heaps surrounded by a membrane. Milk shows, besides the fat globules, blue bions. Similarly, cheese, in particular those kinds in which bacterial activity is of importance, such as Kephir, yoghurt, Roquefort; further, casein of any kind. *Vitamins,* if studied at 2000x, are shown to consist of irregular blue vesicles which refract light strongly. *Egg white* when raw shows no structure; when cooked, heaps of blue vesicles develop. *Blood serum* shows similar phenomena; the blood platelets and the white and red blood corpuscles show an intense blue glimmer.

Moss and *grass* show a striated structure similar to muscle. If cooked, they disintegrate into blue vesicles. If one examines them, it looks as if there were algae present. One may ask then, whether the algae found in stagnant water are not the same as our bions, namely, matter disintegrated into energy vesicles. Stagnant water is full of blue vesicles which serve as food for protozoa. The bion experiments give a surprising answer to this question, which will be discussed in a different context.

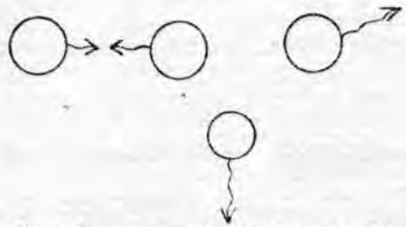
We try to find out more about the *mode of formation* of the bions. We bring together, in a definite sequence, certain substances which show no structure. First we make the following solutions: a) 100cc water + 50cc 0.1n KCl + 2 mg dissolved gelatine + 50cc filtrated bouillon; b) some drops of egg white in KCl; c) some fresh lecithine in KCl. These solutions show no structure; only the lecithine shows membranes enclosing a space without an inner structure. We mix the three substances. Within a few minutes, microscopic examination shows the appearance of blue bion vesicles. While previously there was no motion, now the field is filled with moving forms. The gelatine combines several blue vesicles into a heap which contracts and expands. It is as if the individual vesicles on the inside were trying to move in different directions and were thus producing the inner motion. Generally speaking, we can distinguish four types of motility:



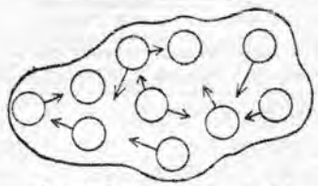
1. Non-moving vesicles



2. Vesicles moving but stationary



3. Vesicles moving from place to place



4. Heap of vesicles with ameboid motility, or "protozoon" (ameba)

Fig. 2. Forms of movement observable in bions.

If we now add blood charcoal powder we find the development of strongly mobile coal bions. We see how the carbon absorbs the protein-containing fluid. The lecithine tubes which previously were empty now become filled with vesicles. The picture is all "alive." We autoclave the mixture. The motility increases further considerably. Now there appear T-bacilli. The biological stain reaction (carbol fuchsin, Giemsa or Gram) is now positive.

This is experiment No. 6 which I communicated to the Académie des Sciences in Paris in January, 1937. In January, 1938, Professor Lapique wrote me that the autoclaved preparation, one year later, still contained contractile forms with life-like movement. This seemed all the more surprising as the sterile preparation was sealed airtight. Professor Lapique's letter follows:

Université de Paris
Faculté des Sciences
LABORATOIRE DE PHYSIOLOGIE GENERALE
1, Rue Victor-Cousin (5e Arr.)

Sorbonne, le 25 Janvier 1938

Monsieur le Docteur,

Chargé par l'Académie d'étudier votre communication du 8 Janvier de l'année dernière, j'ai d'abord attendu le film que vous annonciez. Puis, ne le recevant pas, j'ai examiné au microscope les échantillons que vous aviez joints à votre premier envoi. J'ai constaté, en effet, les mouvements d'apparence vitale que vous annonciez. Il y a là quelque chose de curieux, en raison du long délai depuis la préparation.

Je suis disposé a proposer à l'Académie de publier brièvement constatation en la faisant suivre d'une courte note de moi-même confirmant le fait avec une interprétation physico-chémique n'engageant que moi. Laissant de côté votre théorie électrique qui n'a rien a faire avec l'expérience, voulez-vous accepter que vôtre communication soit insérée simplement sous forme de l'extrait ci-joint qui en réalité, est un résumé de la partie importante? Il me semble qu'ainsi vous recevriez satisfaction pour votre désir de voir vos recherches prendre place dans nos Comptes-Rendus.

Veuillez agréer, Monsieur, l'assurance de ma considération distinguée.

(signed): Dr. Louis Lapique
Professeur honoraire à la Sorbonne
Membre de l'Académie des Sciences

Translation:

Sorbonne, January 25, 1938

Dear Dr. Reich:

Charged by the Académie to study your communication of January 8, 1937, I waited for the film which you wrote you were going to send.

When it did not come, I examined microscopically the preparations you sent with your first report. I have, indeed, found the life-like movements which you describe. There is something surprising here, in view of the long time that has elapsed since the preparations were made.

I would like to suggest to the Académie a brief publication of your findings, followed by a short note by myself confirming the facts and containing a physico-chemical interpretation for which I alone would be responsible. Leaving aside your electrical theory which has nothing to do with the experiment, would it be agreeable to you to have your communication published simply in the form of the enclosed extract which, in fact, is a résumé of the important part? It seems to me that in this way your wish to see your findings published in our Bulletin would be satisfied.

Very sincerely yours,

Dr. Louis Lapique

I withdrew my permission to publish the findings in the Bulletin of the Académie, for the following reasons:

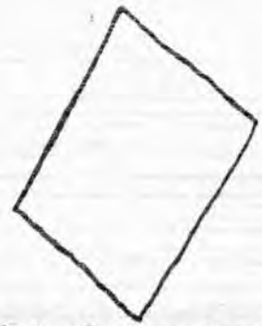
1. Dr. Lapique's chemico-physical interpretation would have completely obliterated the *biological* character of the experiment.

2. During 1937, it had become possible to make *cultures* of bions. This finding had been experimentally confirmed by Du Teil in Nice. Nevertheless, the Académie wanted to *omit* this all-important finding from the publication.

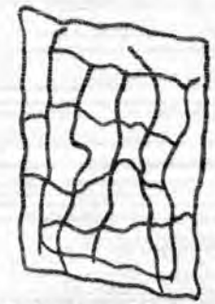
3. The résumé as suggested for publication did in no way render the extensive communication which I had sent to the Académie. The publication of this inadequate résumé would inevitably have led to misunderstandings and erroneous control experiments.

The theoretical implications of my dealings with the French Academy of Science will be discussed extensively in a different context.

Among metallic substances, soft *iron filings* are most suitable for our experiment. We put some sterile iron filings into our standard bouillon + KCl solution and after only a few minutes we see small vesicles develop from the iron particles. This can be followed microscopically: if one puts an iron particle on a slide and

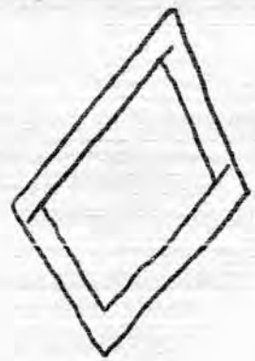


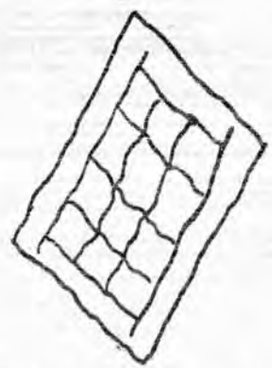
1. Angular form, showing, in the dark-field, fine vesicular structure with striated arrangement.



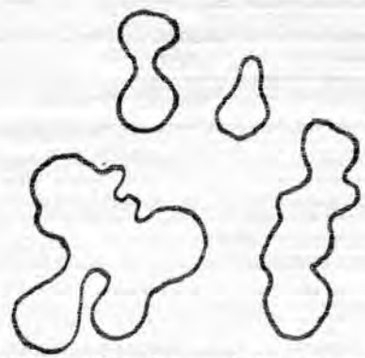
3. Softening; bending of striated structure.

4. Advanced stage of development into bion heap. The content between the structures shows intense blue glimmer. The heap already shows movement.





2. Appearance of marked striation with typical rectangular and rhomboid figures.



5. Iron filing bions of the PA type. Mobile, contractile, showing blue glimmer, capable of cultivation.

Fig. 3. Changes in the structure of iron filings in the process of swelling in bouillon and KCl.

adds KCl, one soon sees bions develop which after about 10 minutes cease to move. They have arranged themselves like small magnets in the form of magnetic force lines and cling to each other. (*Cf.* figs. 2 and 3, p. 369.)

A solution of iron bions becomes colloid in the course of a few days. The particles consist of heavy and angular energy vesicles which are intensely blue and continue to become "softer" and more elastic. The blue vesicles can produce cultures; this will have to be discussed elsewhere.

Humus consists of intensely blue vesicles which are generally mobile. Earth, when autoclaved, disintegrates completely into energy vesicles. The progressive disintegration can be followed by daily microscopic study. (*Cf.* fig. 1, p. 369.)

These experiments are difficult and demand a great deal of patience and perseverance. They cannot be done or be checked in the way a biologist friend of mine tried to do who simply threw some substances into bouillon and waited for the development of the bions. None of the experiments can be made without the knowledge of the process involved.

2. THE QUESTION OF "BROWNIAN MOVEMENT"

Before drawing definite conclusions from our observations, we have to clarify a few basic points.

The contention that the motion of the bions is due to a *specific biological energy* has been countered with the argument that it was a matter of "Brownian movement." Physics has known for a long time that the smallest colloidal particles are in motion, i.e., they move in the field in various directions. These movements have even been calculated. This "Brownian movement" is believed to be due to the impact of the molecules in the solution upon the larger colloidal particles.

That means, it is being explained on a purely *physical* and *mechanistic* basis. Such an explanation is incompatible with the manifestation of energy in the *biological* pulsation. Could this explanation possibly apply to the phenomena presented by the bion energy vesicles? An interpretation is valid only if it makes new phenomena comprehensible. It becomes invalid if it does not

fit the observations. It becomes erroneous when it is strictly at variance with the observations and can be replaced by a new interpretation which makes the manifestations more comprehensible.

The mechanical "Brownian movement" is defended by the physicists like a dogma. True, such defense is justified in the face of mystical interpretations of the phenomena of life. On the other hand, experience shows that the interpretation of "molecular movement" is itself not free from irrational, affective motives. If that were not so, the physicist who sees everywhere nothing but movement of a purely physical nature would not so violently refuse to consider facts which in certain instances contradict his interpretation. I have no illusions of ever being able to convince these physicists; on the other hand, I am convinced that the blind alleys into which a purely mechanistic concept leads will sooner or later force science to listen to new facts and arguments.

There is no doubt that there are movements of small particles which admit of a mechanistic interpretation. I believe myself that the movement of groups of vesicles the elements of which move but which are stationary (*cf.* illustration, p. 18), are not of a biological nature. Whether it is a matter of molecules pushing them to and fro I do not know, since I have never seen any molecules, no more than the proponents of the purely mechanical Brownian movement.

But let us, first of all, examine the requirements of a mechanico-physical interpretation. Since neither the particles nor the molecules ever disappear from the solution, the molecular impulses would logically continue indefinitely, and with it the movement of the particles. Furthermore, *all* particles of approximately the same size would have to be in motion. Third, the only possible movement would be that from place to place.

Contraction and expansion of the contents of the particles cannot possibly be explained mechanically. How could an impulse from a molecule outside produce a vibration inside, or even an expansion? We will subsequently get acquainted with a number of other characteristics of the bions which by no stretch of the imagination could be explained mechanically.

These observations require a magnification of at least 2000x. This is the absolute minimum requirement; a more rigid requirement for conclusive observations is 3-4000x. Another absolute requirement is observation of the *living* preparation, not the dead, stained one. The Copenhagen biologist A. Fischer got quite upset and became unpleasant when he was unable to produce a magnification over 1500x and I insisted on it if anybody were to consider himself qualified to judge my findings. The Giemsa stain of the bions, done at his Institute in 1936, was positive. If these conditions are fulfilled, the following findings which do not fit into a mechanistic interpretation can be secured:

1. The movements are present at times and absent at other times. They appear and then cease again. Bion vesicles appear at the margin of coal particles or moss and begin to move when a sufficient degree of tension and charge is reached. Certain bion preparations show no movement at all. Where are, in these cases, the molecular impulses? After all, the molecules have not disappeared, and neither have the particles. And a third cause of the movements is not postulated by mechanism.

The conclusion is inevitable that *the external motion of the energy vesicles has something to do with their internal charge.*

2. The *internal* motility of many bions, their expansion, contraction, vibration and glimmering is a fact which cannot be explained by external impulses, but only by *internal* energy shifts. Thus, the *internal motility also must be a result of the internal charge.*

3. Bion research shows the living red blood corpuscles to be orgone vesicles. Observed at a magnification of over 2000x, they appear *blue* and show pulsation. Dead erythrocytes are not blue but black. They are immobile and no longer pulsate.

The motility of the erythrocytes can derive only from their internal charge, not from external impulses. With the blue orgonotic color the motility also disappears.

The basic question of all biology is that of the origin of the internal impulses of the living organism. Nobody doubts the fact that the difference between the living and the non-living lies in the internal origin of the motor impulses. This internal impulse can be due only to an *energy* at work *within* the organism. The question as to where this energy comes from is answered by the bion experiment:

The biological energy which produces the internal impulses derives from the very same matter which composes the bion. The energy which we see at work in mobile bionous matter, I termed "orgone." I derived the term orgone from the words "organism" and "orgastic." From now on, the term "orgonotic" comprises all energetic phenomena and processes which specifically pertain to the energy which governs living matter. Every living organism is a membranous structure which contains in its body fluids an amount of orgone; it is an "orgonotic system."

It may be added that the purely mechanico-physical interpretation of the motion of colloidal particles fails to explain a single one of the specific biological reactions. We have cleared ourselves of any possible suspicion of assuming a supernatural life force beyond matter and energy. We have established a connection between the energy vesicles and Einstein's *functional* theory of matter and energy. We have observed some basic processes which indicate the manner in which the orgone derives from matter, specifically, the processes of disintegration of matter and the swelling of the disintegrating particles. *These processes contain the solution of the riddle of living functioning.* The fundamental objective functions of biological energy are identical with the fundamental functions of living matter. The fundamental functions of highly developed organisms are the same as those of the smallest bit of contractile plasm. Any mechanistic or chemical concept must inevitably fail here. For it is not a matter of substances but of biological energy *functions.* This is also the opinion of many biologists. Thus, Üxküll writes:

> Modern animal biology owes its existence to the introduction of physiological experimentation into the study of lower animals. This extension of the field of study did not fulfill the physiologists' expectations. . . . The reduction of the phenomena of life to physical and chemical processes did not lead one step further . . . in the eyes of those scientists who see the essence of biology in the life process itself

and not in its reduction to chemistry, physics or mathematics. (UMWELT UND INNENWELT DER TIERE, Berlin, Springer, 1921, p. 2.)

3. THE T-BACILLI

In connection with the coal bion experiment, I mentioned the demonstration of very small, lancet-shaped bodies by Gram stain. These bodies were termed T-bacilli (T from *Tod* = death) because they have a twofold connection with the process of dying:

a) *T-bacilli originate from degeneration and putrid disintegration of living or non-living protein.*

b) *Injected into mice in high doses, they will kill the animals within 24 hours.*

If cultures of staphylococci or rot bacteria (B.proteus, etc.) on agar are left standing for a considerable period of time, there develops around the culture a *greenish margin* which, against the light, shows a *bluish* glimmer. It has a tendency to spread. At the beginning we made sure that we had a pure culture of staphylococci. If, weeks or months later, we take a sample from the bluish-green margin, we find only a very few cocci, but we find the field swarming with very small bacilli with a very lively zigzag motion. They are about 0.2 to 0.5 μ long and, observed at a magnification of at least 2000x, show a slightly oval shape. (*Cf.* fig. 30c, p. 393.) Inoculated on bouillon, they give a culture fluid with a strong bluish-greenish glimmer and a strong acid and ammonia smell. The longer the bouillon culture stands the denser it becomes and the more intensely blue or green-blue. Cultures of rot bacteria (B. proteus), subtilis or staphylococci (*cf.* fig. 30b, p. 393) agglutinate after a few days, either at the bottom of the test tube or in the form of a membrane at the surface. In contrast, cultures of T-bacilli agglutinate only after months. If the culture is a mixture, all other bacilli agglutinate rapidly, while the T-bacilli continue to live.

T-bacilli can be obtained through degeneration of any kind of protein substance. Thus far, T-bacilli cultures of identical form and reaction have been produced from 15 different sources. *T-bacilli, then, are the result of degenerative putrid processes in tissues.* Following are some of the sources of T-bacilli:

Blood of cancer patients: T-bacilli can be cultivated from the blood of advanced cancer patients by simple inoculation on bouillon. This is one of the essential cancer tests in our laboratory.

Cancer tissues: Any kind of cancer tissue, fresh or old, shows T-bacilli on microscopic examination and gives T-bacilli cultures in bouillon or on agar. If boiled, it disintegrates almost completely into T-bodies with their characteristic red Gram reaction.

Precancerous cells and tissues also give T-bacilli, that is, they disintegrate into T-bacilli or already contain them fully developed. Epithelium of vagina, of the tongue, the skin, or from sputum normally shows no structure. If precancerous, they show in the dark-field extremely small T-bodies.

Degenerating blood (experiment): 2 to 3 cc. of blood are spread out on a sterile Petri dish and dried for 24 hours in the incubator. This is dusted with blood charcoal which has been heated to incandescence. After another 24 hours a sufficient amount of KCl and bouillon is added to cover the substance. Microscopic examination and biological stain reaction immediately demonstrate the presence of T-bacilli.

T-bacilli, no matter what their origin, produce in healthy mice cancerous, destructive and infiltrating growths. This aspect of the bion experiment will be discussed later. Here, I only wish to point out the biologically important reactions which have to do with the orgone problem.

In making bion preparations, one always obtains two types of bions: The blue PA bions described above, and the small black T-bacilli. These two types are biologically antagonistic: The blue PA bions are capable of killing or immobilizing the black T-bacilli. This takes place in the drop under the microscope as well as in the experimental animal (*cf.* fig. 30a, p. 393).

We put a drop of solution of earth, iron or coal bions on a hanging drop slide and add a small drop of a T-bacilli culture. Observation at 400x in the dark-field, or better at 2000x in ordinary light reveals the following: T-bacilli which are in the neighborhood of blue bions show a restless activity, they turn round and round, then remain, with trembling movements, in one and the same spot, and finally become immobile. As time goes on, more and more T-bacilli conglomerate around the blue bions: they agglutinate.

The "dead" T-bacilli seem to attract and to kill the still living ones This fact was the starting point of the orgone therapy experiments in cancer.

The same thing happens with the subtilis and proteus bacilli which are about 5 to 8 times the size of the T-bacilli. In them, the killing effect of the blue bions can be observed even more easily. Finally, the whole field is covered with dead bacilli.

From January 1937 to January 1939, injection experiments with PA bions and T-bacilli were carried out in 178 healthy mice. The result is shown in the following table:

Injection	Number of mice	Dead in 1 week	Dead in 15 months	Sick after 15 months	Healthy after 15 months
T-bacilli	84	30	30	24	0
PA bions, then T-bacilli	45	0	9	..	36
PA bions	39	0	0	..	39
T-bacilli, then PA bions	10	0	8 (two killed)	..	0

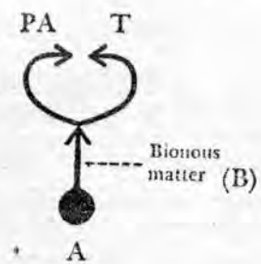
Of the 30 T-mice which died within 15 months, 25 were examined thoroughly for cancerous growths. 7 mice showed ameboid cancer cells in various tissues, 13 showed destructive, infiltrative growths of a cancerous character, the remaining 5 had chronic inflammatory growths. Those mice which survived the T-bacilli injection the longest time showed the most advanced cancer growths.

The connection between T-bacilli and cancer disease is of decisive importance; it will be discussed in Chapter V.

The significance of these experimental findings for the evaluation of the orgone energy is the following:

1. *Theoretical:* We find, at the basis of living functioning, at the borderline between non-living and living, a function which is fully identical with our generally valid diagram of biological functioning: *All living functioning follows the law of the dissociation of the unitary and the functional antithesis and unity of the dissociated.*

From the non-living matter A orgone-containing mobile bions B develop. These bions dissociate into two groups, the PA group and the T group. *These two groups have an antithetical relationship: The PA bions paralyze the T bions.* This fact, considering our knowledge of the physical function of the orgone, admits of but one interpretation: *The PA bions are fully developed, highly charged orgone units. The T bions, on the other hand, represent products of degeneration, they develop when tissues, cells or bacteria begin to lose their orgone charge.* They contain only very small amounts of orgone, they are very weak orgonotic systems.



Since—as will be shown elsewhere from a purely physical standpoint—the stronger orgonotic system always attracts the weaker one and withdraws its charge, the fact that the PA paralyze the T finds its simple explanation. That is, the biophysical functional relationship between the PA and the T can be deduced from the purely physical functions of the orgone.

2. *Practical:* The T develop either through *degeneration,* in other words, through orgone loss in more highly developed forms, or through *primary insufficient development of free orgone* within an energy vesicle.

Thus far, T-bacilli have been produced in my laboratory through degeneration of the following tissues and bion preparations: dried blood, dried feces, autoclaved cancer tissue, autoclaved egg medium, which was dusted with charcoal and to which KOH was

added, epithelium from the tongue which had been damaged by bridgework, degenerated vaginal epithelium, degenerated spermatozoa, degenerated rot bacteria, coal bion preparations of various kinds, from egg medium through the effect of potassium cyanide, and others.

The deficient orgone content of the T-bacilli manifests itself in a very peculiar fact which might well be described as "orgone hunger." It can be demonstrated in the following manner:

We filtrate blood which we have diluted about 10 times with normal KCl solution. A Berkefelt filter with pores of less than 0.25 μ prevents any possibly present T-bacilli from getting into the serum. Microscopic examination at 2-4000x shows only fluid and the complete absence of any structures. We add to the serum a tiny drop of a culture of T-bacilli which is *pure*, that is, it contains no PA bions. Within the course of a few minutes, we witness a spectacle which is extremely exciting and which, in all probability, contains the secret of the "immune bodies" in the serum:

At first we see only T-bacilli move around in the field. But soon there appear, here and there, large blue vesicles with a membrane, around which more and more T-bacilli group themselves, just as in a mixture of PA and T. The T seem to have given rise to the formation of the blue PA bions in the serum; a control serum without T does not contain any PA. The PA, once formed, have a paralyzing effect on the T which begin to agglutinate.

Now another, even more peculiar process sets in. The heap of agglutinated T is black; it does not show any trace of blue. But in the course of a quarter hour or half hour *this black, dead heap begins to assume an intense blue color and to form membranous vesicles*. These are again nothing but PA bions. The dead T have withdrawn orgone from the serum and have developed into PA bions.

These two phenomena are as yet not fully explored. They are connected on the one hand with immunity and on the other hand with the formation of vesicular structures or vesicular disintegration in tissues which come in contact with T-bacilli.

If one applies T-bacilli under the skin of a healthy mouse, one finds after a few days an inflammatory, non-purulent swelling;

microscopically, this is shown to consist of vesicularly disintegrated tissue. Similarly, epithelial cells of cancer patients first disintegrate into T, after which abundant blue PA bions develop in the surroundings.

I shall interrupt here the description of these observations on the body orgone; further investigations will show of what conclusions they admit. At any rate, there is no doubt that the *T-bacilli lead to bionous tissue disintegration* and that *cancer cells organize themselves from bionously disintegrated tissue* in the same manner in which amebae and other protozoa develop from moss bions. (*Cf.* Chapter V.)

The T blood test.

The biological vigor (functioning power) of a cell is determined neither by its structure nor by its chemical composition. The disintegration of structure and of chemical constitution are the *results* and not the causes of the *biological disintegration*. For the structure as well as the biochemical equilibrium of the cell are themselves expressions of its biological functioning capacity. The biological function itself has hitherto been a mystery. The orgonotic charge of the cell makes it possible for us to determine the biological functioning capacity experimentally.

The red blood corpuscles (erythrocytes) of two individuals may be the same structurally and chemically and yet differ sharply in their biological functioning. Microscopic examination may show exactly the same form; the number of the erythrocytes and their hemoglobin content may be normal and the same in both individuals.

Now, let us expose samples of the blood to the same destructive influence. We autoclave a few drops of the blood in bouillon and KCl solution for ½ hour at 120° C. and 15 lbs. steam pressure. Microscopic examination may reveal widely different findings. The autoclaved blood of the one individual has disintegrated into large blue vesicles, while the blood of the other individual shows no blue vesicles but only T-bacilli. Gram stain shows the same differentiation: the one blood gives blue, Gram-positive vesicles

(*cf.* fig. 34, p. 395), the other red, Gram-negative T-bacilli (*cf.* fig. 35, p. 396). This allows the following conclusion:

The one blood sample points to a strong orgonotic charge of the erythrocytes. After autoclavation, this charge shows itself in the blue bions (*"B reaction"*). The other blood sample points to a weak or minimal orgone charge of the erythrocytes. After autoclavation, this lack of charge shows itself in the absence of blue bions and in the presence of T-bacilli, the result of degeneration of the erythrocytes (*"T reaction"*).

The T reaction is typical of advanced cancer patients in whom the orgone of the blood has been used up in the struggle against the systemic disease (cancer biopathy) and the local tumor. The T reaction is often present *before* any symptoms of anemia and can betray the cancer process long before the development of a palpable or visible cancer tumor.

Conversely, orgone-weak erythrocytes take up orgone avidly when it is introduced into the organism in the orgone accumulator. We find then that the autoclavation test reveals a disappearance of the T reaction and its replacement by the B reaction. That is, the erythrocytes become more resistant to autoclavation; they contain more orgone.

The erythrocytes can be charged by the atmospheric orgone (the effects of the orgonotic sun radiation is based on the same principle). This can be checked experimentally. We mix on a microscopic slide biologically (i.e., orgonotically) weak blood with rot bacteria or T-bacilli. Due to the weak charge of the blood, it does not kill or agglutinate the bacteria and T-bacilli. If, now, we charge the organism orgonotically (the amount of charge can be judged by the autoclavation test), we find that the blood has acquired a strong capacity to paralyze and kill the same pathogenic micro-organisms. The same phenomena can be observed with smaller protozoa which are not damaged by orgonotically weak blood but are paralyzed by strongly charged blood.

The erythrocyte is a tiny orgonotic system which contains within its membrane a certain amount of orgone. If observed at 4000x the erythrocytes show an intense blue glimmer; their contents show a strong vibration; they expand and contract; in other words,

they are not rigid as is commonly assumed. They carry the atmospheric orgone from the lungs to the various tissues. The connection between atmospheric oxygen and orgone can as yet only be guessed at. Whether the orgone is identical with the chemical particles of the air or basically different is an open question.

The orgonotic charge of the erythrocytes is also expressed in their shape and structure. Poorly charged cells are more or less shrunken and have a narrow margin of blue which is not intense. When the organism is charged, the erythrocytes fill out, the blue margin becomes intense and wide, sometimes extending over the whole cell. No pathogenic micro-organism can exist in the proximity of such strongly charged erythrocytes.

What the immunity to infectious diseases, colds, etc., has to do with this is still obscure; but it should not be difficult to find out the connection. In all probability, the degree of orgonotic charge of tissues and blood cells determines the degree of susceptibility to infections, that is, the so-called "disposition."

weak *strong*

Orgone margin narrow
Blue color weak
Membrane often shrunken
("poikilocytosis")

Orgone margin wide
Blue color intense

Fig. 4. Erythrocytes with weak and strong orgonotic charge (as seen at 4500x)

That it is the orgone charge of the erythrocytes which exerts a killing effect on protozoa and bacteria is shown by the fact that in the process of killing the pathogenic micro-organisms, the erythrocytes gradually lose their blue color, become black and sometimes disintegrate into T-bodies. The examination of cancer tissue in treated mice shows that the charged erythrocytes penetrate into the cancer tissue which, in their proximity, disintegrates into immobile T-bodies. But we no longer see any erythrocytes, only T-bodies. The cancer tumor shows cavities which on microscopic

examination (dark-field, 3-400x) are shown to be filled with T-bodies. Macroscopically, the content of the cavities is first blood-red, then becomes progressively rust brown, owing to the hemosiderin from the disintegrated erythrocytes. The latter have lost their biological charge. The typical secondary anemia of cancer patients is the expression of the fact that the biological energy of the blood has been used up in the fight against the T-bacilli and the cancer cells.

This will be discussed in detail in the chapter concerning the cancer experiments. Here, we were only interested in how the orgonotic charge of the blood cells acts under various conditions. Summarizing, we can say that *the strongly orgone-charged erythrocytes act upon bacteria and small protozoa just like bions, e.g., of earth, iron or coal.* Since they are formed in the bone marrow, we must assume that the bone marrow has the ability constantly to create new bions. The organization of energy vesicles is a basic characteristic of animal and plant tissue. These facts underlie the orgone therapy experiments in cancer: *By introducing orgone from the outside, we relieve the organism of the burden of having to use up its own orgone in the fight against the disease.* This is a further proof of the identity of atmospheric and organismic orgone (= "biological energy").

The experiment shows the following:

1. An infusion of grass develops no or only a very few protozoa if it is kept in the orgone accumulator from the beginning. Apparently, the orgone charges the grass tissue and prevents its disintegration into protozoa.

2. Fully developed protozoa are not killed in the orgone accumulator.

3. T-bacilli are not killed in the orgone accumulator, but the blood of cancer patients becomes free of T-bodies if the patient has been orgone-irradiated intensely.

4. LUMINATION AND ATTRACTION

That animal blood radiates is a well-known fact, first pointed out by Gurwitsch, I think. Since, in the light of orgone biophysics, the erythrocytes are nothing but orgone energy vesicles, it is important to demonstrate the radiation microscopically. One of its main characteristics—as we find out in the field of pure orgone physics—is the "orgonotic attraction" which has nothing to do with iron magnetism. In the following, I shall describe some of the experiments which allow the observation of orgonotic attraction; they all have in common the procedure of microscopically observing the mixture of different kinds of bions in the usual bouillon plus KCl solution.

The killing and agglutination of bacteria by various bions, is, from the point of view of energy, nothing but *an attraction with consecutive withdrawal of orgone by the stronger orgonotic system, the PA bion.* In mixing various kinds of bions, we become acquainted with other important effects of the orgone energy.

Let us try first a sterile mixture of *erythrocytes and earth bions.* We need no more than a drop of diluted blood and of earth bion solution diluted sufficiently to make the observation of each individual bion feasible. Below 2000x no results can be expected. However, a good 80x apochromatic object lens with a 16x eyepiece in a microscope with inclined binocular tube are sufficient. The use of a special water immersion lens which simply is put into the solution is recommended. The mechanical disturbances disappear almost immediately. The metal has no effect, for the phenomena are the same if looked at with a cover glass. However, working with direct water immersion is more convenient and quicker. Cover glasses are inconvenient anyhow at this magnification and with the necessary use of hanging drop slides, because they break too easily. Every kind of control shows that the immersion of the object lens into the solution produces no disturbance of any kind.

The radiating bridge between two orgonotic systems.

At first, the earth bions and the erythrocytes move individually by themselves. Gradually, however, they begin to group themselves, usually in such a manner that several erythrocytes collect around a large earth bion and come closer and closer, until they touch each other. Then, an intense radiation sets in where they touch each other. In places where the bodies are not touch-

ing each other directly, but are at a distance of about 0.5 to 1 μ, there develops *a strongly radiating bridge between the earth bion and the erythrocyte* which seems to connect the two. This bridge shows intense vibration and is alternately wider and narrower. Finally, the membrane between the two bodies is less sharply defined. If one only observes long enough, one can easily see how the erythrocytes begin to refract the light more strongly, their blue becomes more intense, they become bigger and tauter and show vivid pulsation. In this manner, one can *charge erythrocytes with orgone* just as one does in the body by orgone irradiation of the organism. If, in this experiment, one uses weak, deformed erythrocytes from cancer blood, their filling up and radiating is even more easily observable. Orgonotically weak erythrocytes exert little or no influence on bacilli and small protozoa. If they are charged with orgone, the effects appear. *The erythrocytes "fill themselves" with the orgone from the earth bions.*

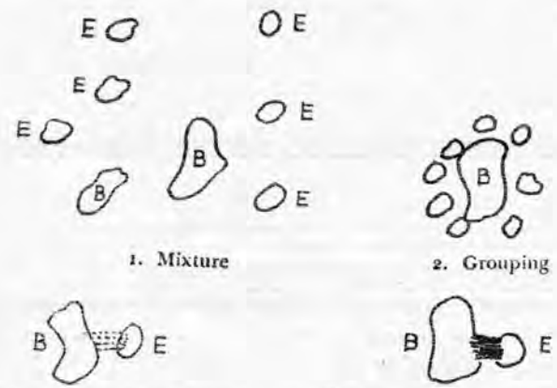
Injection of sterile earth bions in cancer mice had the same effect as irradiation in the orgone accumulator: inhibition of tumorous growth, replacement of the tumor tissue by strongly radiating blood, and killing of T-bacilli. In the bion mixture we can observe directly what takes place in the organism as a result of bion injections. This mode of orgone application was used in my laboratory before the atmospheric orgone was discovered. After this discovery, the bion injections were replaced by irradiation in the orgone accumulator.

Between earth bions and erythrocytes no fusion of substance takes place, only the formation of a radiating bridge. The same is true of iron bions, coal bions, etc. However, coal bions and bions from autoclaved blood or any protein substance penetrate each other. This *fusion* will be shown to be of great importance for an understanding of the experimental production of tumors in mice by tar.

5. FUSION AND INTERPENETRATION

What sexuality and procreation have in common is that *two orgonotic systems undergo an orgonotic fusion.* In the protozoon, the fusion in copulation is followed by *a mutual penetration* of

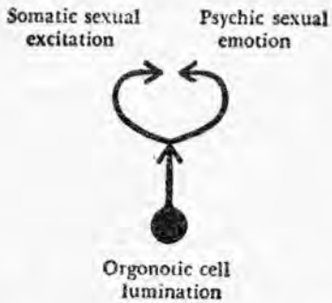
body substance. Fusion and interpenetration are material processes as well as energy processes. In the metazoon, however, they are much more complete from the point of view of energy than that of substance. In the act of copulation, the male penetrates the female; both organs then form a functional unity. In many hermaphroditic molluscs (snails and worms) the penetration is a mutual one, but remains limited to the genitals. In the fusion of the gametes to a zygote, however, the fusion and interpenetration is complete in a material sense also. While in the metazoa the fusion is limited to the genital organs and the gonadal cells, *the orgonotic function is a total one;* that is, two copulating beings (in the human only if orgastic potency is present) fuse temporarily into *one orgonotic energy system.* The orgonotic fusion is always preceded by a lumination. Orgonotic *cell lumination,* physiological *excitation* and psychic *sexual* emotion are functionally identical processes. The psychic perception of a sexual object can produce physiological excitation (erection); conversely, physiological excitation (stroking, friction) can produce a sexual emotion. This psychosomatic process leads to orgonotic lumination of



1. Mixture
2. Grouping
3. Formation of a "radiating bridge"
4. Dissolution of the membranes and orgonotic fusion

Fig. 5. Phases in the formation of a radiating bridge and orgonotic fusion between earth bions (B) and erythrocytes (E).

the total organism. Conversely, strong orgonotic lumination of the organism leads to the urge to physiological friction with accompanying psychosexual emotion. In terms of our diagram of biological functioning:



We have to take seriously the concept that energy manifestations in the metazoon are performed in *every* individual cell and that, strictly speaking, they have their origin there: the *orgone lumination* of the individual cell is what physiology and biology call "cell excitation" and what depth psychology calls "organ libido" or "cell libido." We have made a considerable step forward in the understanding of these processes, because now we know that an objectively demonstrable, specifically biological energy is at work in the cells. The basic energy functions are: formation of a radiating bridge ("sexual contact"), lumination, fusion and interpenetration. Here, we only want to get an idea of the energy processes of fusion and interpenetration, as it can be seen in bions. We have good reason to be thrilled by the view of the fusion of a coal bion and an earth bion; the hypothetical concepts of "cell excitation" and "organ libido" have become tangible realities.

When the coal bions have been attracted by the heavier and thus less mobile earth bions and have formed the radiating bridge, we see the energy process continue which presents clearly every phase of copulation.

The "excited," that is, luminating bions approach each other more and more closely. At the points of the radiating bridges, the coal substance (in the form of bions) gradually begins to enter

into the earth bions. It looks as if the earth bions were absorbing the coal bions. Finally, the smaller coal bions have penetrated completely into the body of the earth bions. They still can be distinguished clearly by their black membranes while those of the earth bions are brownish. The whole complex, consisting of earth bions plus coal bions, looks brown *and* black. Gradually, the black disappears, the membranes of the coal bions are dissolved. The earth bion becomes darker, its blue vesicles radiate more strongly. Finally, no coal substance is any longer visible.

One might also say that the earth bion has "eaten up" the coal bion. Such a differentiation of fusion in the sense of "eating" or "copulating" means nothing because on this most primitive level, the function of the biological energy is undifferentiated. It would be extremely difficult to differentiate the function of the incorporation of small protozoa by bigger ones from that of copulation.

Incidentally, this is true of the metazoon also if we describe energy processes and refrain from anthropomorphically and finalistically giving them a goal. Seen finalistically, a suckling infant fulfills an entirely different "goal" from that of the woman who takes a penis into her vagina. The first "serves" the "preservation of the individual," the second the "preservation of the race." But it is time to put a stop to such finalistic differentiations when we are speaking of *biological* functioning. From the point of view of *energy*—and no other point of view is biophysically tenable—the process taking place between the mouth of the infant and the maternal nipple is exactly the same as that between the vagina and the penis. The functional identity pertains to every last physiological detail. Let us not be influenced in such serious matters by the moralistic hypocrisy which declares the "sacred" act of nursing to be "asexual," so as not to "desecrate" it by equating it with the "dirty" sexual act. It is not a matter of being sacred or not sacred, but a matter of biological functioning. Only now we understand, in terms of biophysics, Freud's important finding that the infant's mouth is a *sexually* excited organ no less than the maternal nipple. This one piece of insight is ever so much more valuable for an understanding of the widespread inability of women to nurse their infants than all kinds of medical theories.

Thus, the question whether the earth bion has "eaten" the coal bion in order to "build itself up" and thus acted "morally," or "reasonably," or whether it united itself "sexually" with the coal bion, is of no import to us. What matters to us is the basic character of the process, that which is common to all basic biological functions, be it eating, conjugation, copulation, the formation of zygotes or the sexual act of the metazoon.

The fact should be mentioned that there is such a thing as a *satiation* of the orgone hunger in bions. If one adds only a few coal bions to an earth bion solution, one finds no coal bions left after a few days. But if one adds a large amount of coal bions, they do not all disappear.

Different kinds of bions show different degrees of "orgone hunger." Sand bion cultures, for example, are "greedy" toward coal bions; similarly, iron bions fuse readily with coal bions. Bions from boiled organic substances, such as muscle, are far less ready to take up the coal bions. These observations allow the conclusion that the less carbon a bion contains originally, the greater its tendency to take up carbon. The SAPA bions, derived from sand, originally contained no carbon, the iron bions only traces of carbon. The muscle bions, on the other hand, are composed of carbon compounds; thus their hunger for carbon is far less than that of the sand bions. I resist the temptation to draw the possible far-reaching conclusions concerning the origin of the plasma on our planet; we shall stick strictly to the facts.

Not only coal bions fuse with others. We shall also see fusion between earth bions and iron bions, iron bions and muscle bions, coal bions and blood bions, and others. Here is an enormous field for further investigation.

In summary: *The orgone energy vesicles show the basic functions of living substance fully developed: attraction, lumination, radiating bridge, fusion and penetration.*

These functions are specific characteristics of the orgone vesicles, for bions which have lost their charge also lose these functions. These functions, then, are not determined materially, but by *energy*. They are specific orgone functions and have nothing to do with magnetism or electricity.

Now we have a better background for an approach to the observations regarding the organization of protozoa and cancer cells.

6. THE NATURAL ORGANIZATION OF PROTOZOA

I would like to preface this section with the excellent statement with which the biologist Üxküll introduces his book, UMWELT UND INNENWELT DER TIERE:

> The word "science" has become a ridiculous fetish. It may be well to point out that science is nothing but the sum total of the opinions of living scientists. . . . By and by, all opinions are forgotten, changed or thrown out. Thus, without any exaggeration, the answer to the question, "What is a scientific truth?" is "An error to today." . . . We hope to progress from gross errors to less gross ones. But whether we are really progressing on this path is highly doubtful as far as ***biology*** is concerned.

Early in 1938, I published some accelerated motion photographs which in a simple and unequivocal manner demonstrated the fact that protozoa do not originate from alleged air germs, but from bionously disintegrating moss and grass (*cf.* DIE BIONE, figs. 12, 13, 18-21, 23, 28ff). With a very few exceptions, the world of biology, of the "error of today," kept silent about these microphotos. Today, 8 years later, the facts speak for themselves. (*Cf.* figs. 6, 7, p. 371; 8, p. 372; 10, p. 374; 11, 12, p. 375.)

To continue: The animal does not consist of a mechanical sum of organs, any more than the organ consists of a mechanical sum of cells. The total animal, each individual organ and each individual cell, each for itself, forms an orgonotic system which is governed by the four-beat of tension→charge→discharge→relaxation and thus is a functional unit. It is characteristic of the living system that every one of its parts may operate according to the formula of tension and charge by itself *or* in connection with the total organism.

In modern biological literature, since about the first world war, the functional point of view has gradually come into its own besides the mechanistic one. One of the basic problems of biology is the fact that the functions of structures (musculature, nerves,

glands, etc.) are mechanically understandable while the functions of the protoplasm appear like a miracle. One basic difference between the protoplasm and a machine lies in the fact that "fluid machines are inconceivable" (Üxküll). The protoplasm functions on the basis of characteristics which the machines do not possess. It functions *without having a structure*. It perpetuates itself through an equilibrium between assimilation and dissimilation, that is, through *function* and not through material structure. As soon as the function ceases, the material substance collapses. *The material structure itself is dependent upon the function of the living plasm*. "The animal is an event" (Jennings).

These facts are inaccessible to a biology with a chemical, mechanistic orientation.

Let us see what answer the knowledge of the orgone functions provides to these riddles. One thing is obvious: A concept which has everything derive from "germ Anlagen" and which simply assumes that the "germ plasm" has always been there and always will be, without asking about *its* origin—such a concept cannot answer questions as to plasmatic functioning. For according to such a concept, everything is already contained "materially" in the germ, just as the "preformation theory" assumes all future generations to be preformed in the gonadal cells. If, now, we can demonstrate, microscopically and photographically, *the process of non-plasmatic matter becoming plasmatic*, we will also gain insight into the *development* of the plasma function. *The plasma function has been shown to be identical with the function of tension and charge*. For from the alternating expansion and contraction in the biological pulsation all more complicated functions can be derived. Non-living substance does not pulsate, living substance pulsates. *It is precisely at the point of transition from immobility to pulsatory mobility that we have to look for the solution of the riddle of biogenesis*. This point of transition can, in fact, be demonstrated microscopically and photographically.

What harm the metaphysical germ theory did in biological research can be shown by the following facts:

I know of no textbook of biology which would contain a description of the *material* of infusions from which protozoa are obtained.

They say nothing about *what takes place* in the grass or moss. They simply state that after a few days the protozoa are "there." The argument which again and again was used against the natural organization of protozoa, namely, that no protozoa are found in moss which had been heated, cannot be taken seriously. In addition, it has long since been proved erroneous by various biologists. The tenacity with which it is upheld just the same betrays an interest which is *not scientific but religious*. We can now add: Even if moss which has been heated does not contain protozoa, it contains, nevertheless, blue bions. These bions, however, are found also in moss which has not been heated but which undergoes a process of gradual swelling.

During 1944 we obtained protozoa from grass which had been sterilized at 50, 60, 70 and even 80 degrees Celsius.

In every textbook of biology we find the contention—which one author takes over blindly from the other—that the protozoa develop from germ cysts. They observed the fact that protozoa can take on spherical shape. This observation is correct, but it was misinterpreted. They observed two separate processes which they combined into *one* contention. One process is the protozoa's taking on spherical shape when they are damaged. The other is the development of spherical forms in grass infusions, and these have nothing whatsoever to do with the spherical protozoa. These round forms are the result of a gradual *development of bions into a heap of bion vesicles*. This spherical bion heap is a typical stage in the natural organization of protozoa.

We read in the textbooks of biology that the infusions are full of "algae" which also are supposed to have developed from "germs." That the protozoa live on these "algae" is correct. But who has ever seen the "germs" of such algae? And how is it that we find these very forms which are called algae in a preparation which consists of nothing but autoclaved blood or muscle tissue? These "algae" are nothing but our bion vesicles into which any organic tissue disintegrates when it swells. Instead of contending that the "germs" of the protozoa are in the air and that they "settle down" and develop where a "suitable" medium "presents itself," we shall go to the trouble of observing an infusion right from the

start, for at least an hour every day, at a magnification of 2000x. There are no protozoal "germs" in the air at all (Plouchet). This superstitious belief of biology is no less amazing than what we are to see in these observations.

But first we will make a single experiment to see whether we can find any protozoal "germs" which have settled as "spores from the universe" on the grass or moss. Holding some grass blades with a pincette, we squeeze the "germs" into a glass of unsterile water. We made sure that the grass was not in vesicular disintegration but had its normal cellular structure. Whatever we do, *we cannot find a single protozoon or a single cyst in the unsterile water into which we have dipped the grass. But what takes place in the infusion?*

In the course of 2 to 3 days the grass disintegrates into bion vesicles like any other substance which we make to swell (*cf.* figs. 4 and 5, p. 370). Even at a magnification of 4000x, no bacteria, cysts or protozoa can be seen. However, the disintegration of the grass progresses further and further; after another 2 or 3 days, there is hardly a blade which would show the original cellular and striated structure undisturbed. There may already be a few protozoa, but we focus our attention on the bions. We see how they conglomerate here and there into heaps and develop a membrane. We can follow every step in this development. Here and there we see some bion vesicles within a heap develop delicate rotating or vibrating movements. They assume an increasingly taut form and actually look like cysts. But they are not dried-up protozoa; they are forms *in the process of developing from a bion heap.* These bion heaps may be of various sizes and shapes. The tauter they are the more they assume spherical shape. They have filled with fluid, that is, have become mechanically tense. The first phase of the function of tension and charge has taken place. We have to look at one and the same form for many hours at 2000x and have to keep adding fluid so that it remains in focus. We also can take accelerated motion pictures. This makes the job easier, but many interesting details get lost. The development of such a heap of vesicles into a pulsating protozoon takes 1 to 2 days. The protozoal primal vesicle (bion heap) remains immobile for hours,

but, as seen in the accelerated motion picture, it gets tauter and tauter and more and more demarcated from its surroundings. Gradually, *a movement of the energy vesicles* within the bion heap begins to set in. One can distinguish the following variations of motility:

a) *Rolling:* The energy vesicles within the bion heap roll rhythmically toward each other and away from each other. One has the impression of mutual attraction and repulsion. The causes of this rolling movement can only be guessed at: At first the vesicles of the disintegrating grass adhere to each other. Their orgone charge is the same as that of the other grass bions which do *not* develop into protozoa. In the process of the swelling and becoming tauter of the spherical heap of vesicles, more orgone must be developed within each of the individual vesicles, since, as in the coal bion, the swelling makes the membrane become thinner and the orgone charge more intense. When the vesicles within the bion heap have lost their mechanical connection with each other, their orgone charge can begin to manifest itself in motion. One of the first effects of this is the *orgonotic attraction* between the vesicles. The attraction on the part of more distant vesicles results in mutual attraction and repulsion.

b) *Rotation:* In many bion heaps the total content of the vesicles begins to rotate in one direction. This movement may continue for hours. It becomes more intense, and finally one sees the whole heap, *including the membrane*, rotate. In this process, it detaches itself from the surrounding bionous grass tissue.

c) *Confluence of the energy vesicles:* Not all of the bion heaps maintain the vesicular structure of their plasma. In many kinds of amebae, the boundaries between the individual vesicles disappear and the plasma forms a homogeneous mass with a bluish glimmer. In others, the vesicular structure remains until they are fully developed. The same is true of cancer cells which develop in exactly the same way from disintegrating animal tissue as the protozoa from grass or moss. *Cancer cells are nothing but protozoa which in the animal organism develop from tissue bions.* The process of organization of protozoa in grass or moss infusions is *the*

key to an understanding of the organization of cancer cells in animal tissue.

d) *Pulsation:* At a magnification of about 3000x, one can see very small movements of expansion and contraction already in the bion heap. It seems that those forms in which the energy vesicles flow together are much more apt to develop pulsation than those which maintain the vesicular structure of the plasma, as, for example, the "org-protozoon." (*Cf.* fig. 10, p. 374 and fig. 13, p. 376.)

A variant of the confluence of the bions can be observed in the primal vesicle of many paramecia. Here, the small bions do not flow together into one mass, but, instead, groups of them form medium-sized vesicles within the larger body. These vesicles then show movements of rolling and rotating in relation to each other just as the bions from which they originated. *The more bions flow together, that is, the more fluid the plasma, the greater is the motility of the total organism.*

Particularly at the margins of the disintegrating grass, one finds, next to "finished" animals, every stage of development and form. As in the *ameba limax* and *proteus*, the nucleus is formed through a special *concentration* of energy vesicles which manifests itself in increased lumination.

The transition from one stage of development to the other is difficult to follow by direct microscopic observation because it is extremely tiring. Here, the accelerated motion picture device is a great help. In order to take moving pictures over a period of days, one puts the cover glass on the hanging drop slide in such a manner that it does not completely cover the cavity. One draws a little liquid over the edge of the cavity and forms on the outside a reservoir of fluid from which one can add to the preparation without disturbing the focus. Taking pictures with a cover glass completely covering the cavity is impossible, first because of the formation of air-bubbles, second because the organisms would suffocate. Thus far, I have succeeded in making microphotos of the bionous structure and plasma movement at a magnification of 2300x in org-protozoa. The finished film shows a process within a few minutes which in reality took 2 to 3 days.

Up to the formation of the bionous primal vesicle the development is the same in all forms of protozoa. But from that point on the protozoa differentiate themselves according to laws which are as yet unintelligible. Years of observation led me to the assumption that the first primal vesicles do not specifically belong to certain specific forms. Rather, the differentiation of specific forms sets in only at a certain point of *common* development (*cf.* fig. 9, p. 373). Here is a wide field for amplification and correction. Why certain forms, once they have developed, are reproduced again and again in the same form, is one of the greatest riddles. In this field, the functional point of view will have to stand many battles with the metaphysical theory of heredity which replaces searching and understanding by ready-made "genes."

Those primal vesicles which tend to rotating movement and have a structure consisting of large vesicles usually develop into paramecia. The resting primal vesicles with a flowing content develop into amebae limax (*cf.* figs. 6 and 7, p. 371). This difference is also expressed in the way in which the protozoa detach themselves from their matrix: the paramecia do so by way of a rolling motion, while the amebae simply flow away from the bionous heap (*cf.* fig. 8, p. 372).

The vorticellae, which I termed org-protozoa because of the orgasm-like contraction and expansion, may remain attached to the grass blade until they are fully developed (*cf.* fig. 10, p. 374). Others detach themselves and swim about freely, sometimes with a little piece of bionous grass attached to them.

The fully developed protozoa take up bions from the fluid by means of attraction. The attraction exerted by paramecia and colpedia on energy vesicles is enormous; it cannot be explained by the mechanical movement of the cilia. For the vesicles in the fluid do not move past the body as one would expect from the action of the cilia; rather, when they come within a certain distance, they are pulled toward the paramecium with great force. The observation is unequivocal. The org-protozoa contract, then expand and open the mouth widely, whereupon the bions in the fluid flow into it with great force. The mouth closes, the animal again contracts into spherical shape, and there is a rhythmic "grinding" movement of the energy vesicles.

Observation at 2-3000x reveals interesting details with regard to the development of the *internal* impulses. At the place where the ameba is about to form a pseudopodium, one notices first an intensive rotary motion of the vesicles. Then they show an intensified blue glimmer and the plasma begins to stream toward the periphery, that is, expansion begins. Many of the blue vesicles are taken along in this process; if so, they lose their blue color and become black. This allows the following interpretation: *The protrusion of the pseudopodium is preceded by a rapid and intense concentration of orgone which constitutes the source of the expansion impulse.* When the impulse is translated into movement, orgone energy is used up; this is the only possible explanation for the becoming black of the vesicles. I do not wish to generalize this conclusion because the phenomenon is not found in all protozoa. The fact cannot be doubted, however, that *it is the orgone charge of the bions in the protozoon which provides the energy* for the expansion impulse and the movement of expansion. A mechanistic explanation by *Brownian* movement fails completely here. These observations also show the untenability of the chemical concept of plasma as being nothing but a highly complex protein molecule. *Living protoplasm is a complex protein governed by free orgone.*

The body of the protozoon shows a *field of orgone energy* which affects its surroundings. It affects bions, small bacteria and other small protozoa mostly in the sense of attracting or paralyzing them. Charged erythrocytes seem to be orgonotically stronger than paramecia or small amebae, for they are capable of reducing the mobility of these organisms. The protozoon consists, from the point of view of orgone physics, *of a nucleus, a plasmatic periphery and an orgone energy field; it thus forms an "orgonotic system."*

Needless to say, the fact of the development of protozoa from bionous plant tissue does not conflict with their procreation by division. *Development by natural organization and procreation by division go on one after the other and side by side,* as can easily be observed under the microscope.

There is hardly any better opportunity of studying the functions of tension→charge→discharge→relaxation than that provided by the protozoa. Their movements, their plasmatic currents, their expansion and contraction, etc., speak an unequivocal language in terms of our formula of living functioning. One can alter these functions by the application of weak electric currents, one can accelerate them and destroy them. But, as is shown plainly by the development of the protozoa, the energy behind these functions derives from the bions which constitute the protozoal primal vesicle. The locomotor functions of the ameba, which as yet lacks any structure, are due only and alone to the orgone energy. The pseudopodia come and go as a result of the function of expansion and contraction. The ameba does not send out a pseudopodium "in order to" reach an object, that is, not on the basis of an "aim" (finalistically); it does it functionally, when a certain object, through attraction, causes an expansion impulse in the orgonotic plasma.

We must, if for no other reason, in the interest of further research, always remember that living matter simply functions but does not betray any "meaning" or "aim." On the basis of "aims," everything is very easy to explain.[1] To find out the nature of unknown functions is far more difficult. The "purposeful action" of the ameba can be reduced to the function of the orgone. For example: it incorporates a bion vesicle because the stronger orgone charge of the protozoon attracts the weaker charge of the free bion. True, in this process, the "purpose" of nutrition is fulfilled, but this is a *result and not the cause* of the action of incorporating. The protoplasm, then, functions not on the basis of mechanical, finalistic principles, but on the basis of *the functions of orgone energy.*

All biological functions can be reduced to the basic function of pulsation, that is, alternating expansion and contraction. The pulsation itself follows of necessity the two antithetical functions

[1] *Translator's note:* When I translated this passage, I had just been reading a chapter of a book in which the wife of a Polish landowner tried to teach the peasant women some simple measures of child hygiene. Her message was received with stony faces. "How many of you have lost babies? Don't you think that many of them would have lived if you had fed them properly and kept them clean?" asked the woman. "It was God's will," cried a peasant woman. "It was God's will," cried others. That was their explanation. It was simple, and as inviolable as the biologists' explanation of the origin of protozoa from "air germs."—T. P. W.

of the orgone energy, dissociation and attraction of orgone-charged organic matter. On the basis of the processes taking place in the plasma of the ameba, we must assume the following effect of the state of matter on the function of the orgone:

The individual orgone-containing vesicles may, as in moss, group themselves in rows and form a striated structure of the tissue. This is to be ascribed to the organizing function of attraction. In other protozoa, the energy vesicles flow together and form a unitary mass. *Every concentration of orgone-charged matter due to attraction automatically calls forth an impulse to dissociation, to a separation of the particles.* When an ameba has assumed spherical shape a vivid rotary movement sets in at the place where the energy vesicles have conglomerated most densely; this movement results in an expansion, that is, a separation of the vesicles. Conversely, the separation of the vesicles from each other results in an impulse to rapprochement through attraction. This is what causes the contraction. As long as the plasma is sufficiently orgone-charged, every contraction leads to an expansion, every expansion to a contraction. This internal process appears externally as *pulsation*, no matter what its rhythm may be. Since expansion goes with hydration, contraction with dehydration, the mechanical and the orgonotic function fuse into the following four-beat: hydration (tension)→expansion (charge)→contraction (discharge)→dehydration (relaxation). However, the pulsation itself depends essentially on the coupling of *dissociation with attraction* and *attraction with dissociation* of the particles.

This process is particularly clearly demonstrable in the contractions of the org-protozoa: After every contraction there is a grinding motion like a friction of the vesicles in the body which goes over into an expansion. The expansion goes with the opening of the mouth which causes the attraction of energy vesicles from the fluid ("eating"), that is, a charging, which in turn results in a contraction into spherical shape, that is, a rapprochement of the internal vesicles. This process repeats itself endlessly.

We will meet this biophysical functioning again and again in various biological processes. In this chapter I have tried to demonstrate the following important fact: *Biological pulsation, the basic phenomenon of living substance, is explained by the two antithetical basic functions of the biological energy, attraction and dissociation, or contraction and expansion.*

Summary:

1. All matter, if exposed to high temperatures and made to swell, undergoes a process of vesicular disintegration.

2. High temperatures (autoclavation at 120°C., heating to incandescence, about 1500°C.) destroy what life there is. But these same high temperatures produce the energy vesicles which in turn can develop into living bacteria.

3. The energy at work in the bions is not introduced into them artificially from the outside; rather, it originates from the vesicular disintegration of matter itself.

4. An energy vesicle is a minute quantity of matter, containing a quantity of energy derived from this matter.

5. The bions are not complete living beings, but only carriers of biological energy; they are forms of transition from non-living to living.

6. The blue color of the content is the immediate expression of this energy. As the blue disappears, the essential biological characteristics of the bions disappear also.

7. The bion experiments do not newly "create" artificial life; they only *demonstrate the natural process* by which protozoa and cancer cells develop spontaneously from vesicularly disintegrated matter. They also demonstrate the natural form in which biological energy is contained in humus, in inorganic material, in foodstuffs, blood cells, gonadal cells, etc.

8. EXPERIMENT XX (1945)

Before continuing my description of the discovery of the orgone energy in 1939, I must mention an important experiment done six years later, early in 1945. This experiment not only confirmed the observations of biological energy in bions up to 1939, but brought to light some highly unusual and basic facts about the existence and the biophysical functioning of orgone energy contained in the soil. This experiment also has an important bearing on the problem of the origin of cancer cells in energetically

stagnant animal tissue, as discussed later. It resulted from an "accident," one of those accidents which are wont to happen in the course of systematic experimental work and which, on closer examination, are shown to be logical results of the experimental thought and work process.

For several years, I had observed earth bion preparations which I kept alive by replenishing the water regularly. I noticed the development of small, rapidly moving living forms of the shape of a bean or of the head of a spermatozoon; in some preparations these appeared after a few months, in others only after years. It was possible clearly to observe the development of these living forms from strongly radiating and slowly pulsating bions. As we know, such living forms do not derive from the air. First, they are not found in air dust; second, they cannot be obtained by air infection; and third, their appearance in the *non-sterile* earth bion preparations only after months or years confirms their organization from the preparations themselves. Furthermore, autoclaved preparations kept under sterile conditions resulted in the same living forms.

In December, 1944, we acquired an apparatus for the quantitative measurement of fluorescence in fluids. The work with this apparatus was based on the following considerations: Earlier experiments had shown that the orgone energy is capable of *luminating*. It was to be assumed that fluids with a higher orgonotic potency, that is, containing more orgone energy, would more strongly luminate than fluids with a weaker orgonotic potency. Correspondingly, the intensity of fluorescence in fluids could be regarded as an expression of lumination. As a working hypothesis, the degree of fluorescence was taken as the measure of orgonotic potency. These assumptions were fully confirmed in the course of the experiment and led to practical experimental results.

The fluorometric intensity, that is, the orgonotic potency, of the fluid which, for months or years, had contained earth bions, was much higher than that of ordinary water. We then set out to investigate changes in orgonotic potency as they occur under diverse conditions. We put earth bion water of known fluorometric

intensity into sealed ampoules which we placed in different localities. Some ampoules we left for several weeks in the laboratory room itself, others in a small triple accumulator, others in the Xray room, still others in the open air or buried in the soil. Our intention was merely that of repeating the fluorometric measurements after some time. After three weeks we noticed that the ampoules which had been in the open air and in which the water had frozen *contained, after thawing, dense flakes.* The accident consisted in the fact that at the very moment when we were about to throw away these ampoules as "contaminated" I had the idea of examining these flakes microscopically. To my greatest surprise, these flakes—which had developed in an absolutely clear, carefully filtrated fluid free of particles—were revealed as very strongly radiating bionous particles. At a magnification of 3000x, contracting and expanding bions could be seen, forms with which we are quite familiar. We repeated the experiment of filtrating and freezing clear bion water until there was no longer any doubt that we were dealing with *a process in which free orgone energy in water, i.e., orgone energy not connected with bionous matter,* becomes organized into plasmatic living substance with all the criteria of life.

In the following, I shall limit myself to a presentation of the technique of this "Experiment XX" and of the established facts. For the time being, I shall refrain from discussing the theoretical framework in which these facts—which are of extreme importance —belong. These facts become comprehensible only if one examines them in the total context of the orgone-physical function; this will be done elsewhere. It must be pointed out here, however, what progress this experiment constitutes in the preparation of bions, that is, viable orgone energy vesicles. To summarize:

1. Between 1936 and 1945, bions were prepared exclusively from matter already organized (humus, grass, iron, sand, coal, etc.). The progress made by Experiment XX consists in the fact that now orgone energy vesicles, with all the criteria of living matter, can be obtained not from already organized matter, but from free orgone energy. This we may call *primary bion formation* in contradistinction to *secondary bion formation* from already

organized matter. The significance of this distinction for the concept of biogenesis and for biochemical processes will be discussed elsewhere.

2. A further progress represented by Experiment XX consists in the fact that it provides a new and incontrovertible proof for the life-specific nature of the orgone energy.

a) The fluorophotometric demonstration of the orgone in earth bion water.

1. Ordinary garden soil is put through a screen and thus cleaned of stones, clumps, etc. If water is added to the screened soil, microscopic examination fails to reveal any kind of motion.

2. We examine distilled water and tap water fluorophotometrically. If we take the fluorophotometric value of distilled water as 1, salt-containing, that is, spring or tap water, is shown to have a value of 2 to 4, measured in Forest Hills, N. Y. The fluorophotometric value of the fluid is its *"orgonotic potency."* The galvanometer connected with the fluorophotometer has a scale with 100 equal divisions. *The orgonotic potency of the fluid to be measured is a multiple of the orgonotic potency of distilled water.* The following table shows the values of orgonotic potency (OP) in various fluids:

Fluid	*OP*
White sugar (saturated solution)	9
Brown sugar (saturated solution)	13
Maple syrup	27
Dextri-Maltose (saturated solution)	41
Honey	73
Orange juice	7
Milk (pasteurized)	55
Milk (not pasteurized)	100+
Egg-white	25
Tea	2
Whiskey (blended)	11
Distilled water	1
Rain water	3
Tap water	4

Fluid	*OP*
Sea water	8
NaCl (physiol. sol.)	4
KCl (0.1 normal)	2
$CaCl_2$ (0.1 normal)	2.5
Ringer's solution	1.5
HCl (0.1 normal)	1
NaOH (0.1 normal)	2
$HgCl_2$ (disinfectant)	3.5
Alcohol (95%)	3
Culture broth	45
50% broth, 50% KCl	60
Sand in H_2O, filtered	1
Iron filings in H_2O, filtered	5
Charcoal powder in H_2O, filtered	7
Earth in H_2O, filtered	8
Earth bions	50 (average)
Grass in H_2O, after development of bions and protozoa, filtered	13
Urine	43

3. The screened garden soil is boiled for an hour in distilled or ordinary water, or autoclaved for half an hour (at 120° C. and 15 lbs. pressure).

4. The water is filtrated from the boiled soil. This clear fluid we call *bion water*. In contradistinction to the original water, which was colorless, this always shows a *yellow* color of varying intensity. The fluorophotometric measurement of the orgonotic potency (OP) is made immediately after the boiling and filtration. Its values vary between about 30 and 60 and average about 45. In other words, the orgonotic lumination of the bion water is, on the average, 45 times stronger than before the boiling process. The galvanometer indicates the reaction of the photoelectric cell which is hit by the fluorescence light; consequently, an increase of the fluorophotometric value of the water after the boiling of the soil indicates a higher energy content of the fluid. This can be given in micro-amperes. However, the value of micro-amperes which we read at the galvanometer is not the real measure of the

EXPERIMENT XX

Date	Prep. No.	Procedure	OP before treat.	Type of Organization		Other Forms Present			Reproduction	T-degeneration
				Bion.	Plasm.	Single Cells	Bean-Shapes	Protozoa		
Jan. 2, '45	XX 1 Org	Kept in accumulator 20 days	46	+			+	+	+	
Jan. 3	XX 1 f	Frozen 21 days	38	++	+	+	+	++	++	+
Jan. 6	XX 1 c	Autoclaved, kept in room	41	+			+	+	+	+
Jan. 8	XX 1 x	Untreated, kept in room	40	+			+	+	+	
Jan. 25	XX 2 f	Frozen 4 days			+	+	+		++	++
Jan. 26	XX 3 cf	Autoclaved; frozen 4 days	52	+	← +	+	+	+	+	++
Jan. 30	XX 1 g	Dried to crystals, put in distilled water		+		+	+	+	+	+
Jan. 30	XX 4 cf	Autoclaved; frozen 3 days	60	+	(+)	+	+		++	+
Jan. 31	XX 5 cf	Autoclaved; frozen 4 days	51	+	(+)	++	+		+	+
Jan. 31	XX 5 cg	Autoclaved; dried, put in distilled water	51		+		+		+	+
Feb. 5	XX 6 cf	Autoclaved; alternately frozen & thawed 6 days	57	+	← +		+		+	++
Feb. 6	XX 6 cg	Autoclaved, dried, put in bion-water	57	+					+	+
Feb. 9	XX 8 cf	Autoclaved; frozen 1 day		+	+	+	+		+	++
Feb. 9	XX 9 cf	Autoclaved; frozen 1 day	37	+	← +	++	+		+	+
Feb. 9	XX 9 cg	Autoclaved, dried, put in bion-water	37	+					+	+
Feb. 12	XX 1 gg	1 g redried, put in tap water		+		+	+	+	+	+
Feb. 13	XX 10 f	Frozen 14 days	52	+	← +	+			+	++
Feb. 13	XX 10 cf	Autoclaved; frozen 14 days	52	+	← +	++	+		+	+
Feb. 13	XX 10 g	Dried, put in bion-water	52	+					+	+
Feb. 13	XX 10 cg	Autoclaved, dried, put in bion-water	52	+				+	+	+
Feb. 20	XX 11 f	Frozen 8 days	42	+	← +	+			+	+
Feb. 21	XX 12 f	Frozen 7 days; degenerated; refrozen 2 days	40	+	← +			+	+	+
Mar. 1	XX 13 f	Cloudy, full of rod bact.; frozen 4 days	44	+	← +	+	+	+	+	+
Mar. 1	XX 14 cf	Autoclaved; frozen 4 days	48		+				+	+
Mar. 2	XX 15 f	Frozen 15 days	61		+	+			+	+
Mar. 5	XX 15 g	Dried, put in bion-water	61		+				+	+
Mar. 7	XX 16 c dil. f	Dilution 1 part bion-water to 4 parts water autoclaved; frozen 5 days	55	+	← +		+		+	+
Mar. 7	XX 17 f	Contained a few rot bact. & protozoa; frozen 5 days	67	+	(+)	+	+		+	+
Mar. 8	XX 18 cf	Autoclaved; frozen 4 days	60	+	← +				+	+
Mar. 14	XX 19 cf	Autoclaved; cloudy, some rot bact.; frozen 13 days			+	+			+	+
Apr. 6	XX 20 cf	Autoclaved; frozen 3 days	38		+	+	+		+	+

orgonotic lumination; it is merely a measure of the excitation of the photoelectric cell which is transformed into electrical energy. As I have shown elsewhere, *the electric units of measurement indicate only an infinitesimal fraction of the actual energy values of the orgone.*

5. Only at first sight does it seem astounding that boiled bion water shows energy values in the range of those of organic fluids such as bouillon, milk or vitamins. On giving the matter some thought, one finds that the result is logical and matter-of-course.

The boiling changed the matter of the soil into motile *bionous* matter. Energy became liberated from the matter. This is clearly shown by microscopic examination: before boiling, the particles of the soil exhibited no motion, while after boiling the orgone energy vesicles show an inner motion, contractility and slow pulsation. In the process of boiling, not only were the soil particles changed into bions and energy was liberated in the particles; more than that: *this energy also got into the water, for water attracts orgone* (and vice versa). In this manner, the orgonotic potency of the water is increased from its original value to that of biochemical fluids of high orgonotic potency.

6. Experience shows that in the boiled bion water rot bacteria develop, even if air is immediately excluded. For this reason, we started to autoclave it for 30 minutes at 120°C. and 15 lbs. pressure. This procedure usually lowers the OP some 5 to 8 points, but in the course of the next 24 or 48 hours it rises again to the original level. The autoclaved bion water is kept in carefully sterilized flasks or in sealed ampoules which are put in the refrigerator.

b) The organization of bionous and plasmatic matter from the orgone energy in the bion water.

Bion water of high OP, completely free of particles and sterile, is placed into vials or test tubes two days after boiling or autoclavation. The vials are sealed off, the test tubes stoppered with sterile cotton stoppers. We divide the tubes into three groups. *Group A* is placed in a triple orgone accumulator of 1 cubic foot; *Group B* is left standing in the laboratory; *Group C* is placed into the freezing compartment of the refrigerator. As controls we use

three groups of tubes with plain sterile water which are placed in the same way.

Two to eight days after the freezing, we thaw out Group C. Before the thawing out, we are struck by the fact that *the yellow color of the bion water has become concentrated in the center of the ice in a dense, brownish-yellow spot.* The surrounding peripheral ice is completely clear. Immediately after the thawing of the ice, one notices whitish and brownish flakes in the previously clear fluid. These flakes have a macroscopic size of about 1 to 5 mm. length and about 1 mm. width. The fluid is yellow and clear throughout.

Groups A and B develop the same flakes, only much more slowly, that is, in a period of from 3 to 8 weeks. Control Group B, kept in the laboratory room, shows no flakes of any kind, nor does Control Group C. Control Group A, on the other hand, ordinary water in the orgone accumulator, also shows flakes, but only in the course of several *months*, and not as dense or well-formed as the experimental Groups A, B and C.

Microscopic examination of the flakes always showed the same two basic types: *Smooth, plasmatic, but well-defined forms* in which there are found dispersed, more or less densely, dark granules and occasionally blue PA bions; or *strongly bionous heaps of orgone energy vesicles* with a strong blue glimmer and margin (*cf.* Figs. 42-46, pages 401 to 404).

The preparations, kept under sterile conditions, showed an *increase in flakes* after a few days, but a much greater increase after 2 to 3 weeks. Microscopic examination shows that the flakes grow individually through addition of substance and also that they increase by division. The threadlike, winding and serpentine light flakes change in the course of the weeks more or less into strongly radiating bionous heaps.

Culture experiment: In order to observe the growth and increase still more clearly, the flakes can be put into clear, sterile bion water. After 1 to 2 weeks, there is definite culture formation. *The flakes become denser.* Observation to date shows that the OP of the culture fluid remains at about the same level or even increases.

Observing the preparations microscopically at regular intervals, say, once a week, over several months, one sees very gradual biophysical changes take place in the flakes. In many of them, spherical bions of about 2 to 3μ diameter, with a margin and strong blue glimmer, develop; these gradually become elongated and finally assume the shape of a bean:

These "bean forms" develop under favorable conditions, i.e., if there is no premature T-degeneration present in the preparations, into contractile protozoa which move rapidly in a jerky manner. The plasma of most of these protozoa has a granular or striated structure; in others it is smooth, without structure. One can obtain pure cultures of these protozoa by inoculating from the fluid *above* the flakes, without stirring up the flakes themselves. They increase from culture to culture without difficulty.

c) Observations and tests concerning the biological nature of the orgone flakes.

1. *The thawed-out, flake-containing preparation XX represents an unresolvable colloid:* Evaporation of clear, yellow bion water results in a yellow, smooth, opaque residue on the bottom of the container. When scraped off, it forms a powder consisting of small yellow or brownish crystals which we termed "orgontin." These crystals cannot be dissolved again, either in ordinary water or in water with a high orgone content. They merely swell up and appear exactly like the flakes which one obtains by thawing out of frozen bion water. They, too, show the manifestations of growth, of multiplication and of protozoa formation.

2. *Microscopic observation of organization:* The flakes grow, both in length and in width; bion heaps become larger through organization of further bions from the fluid. Small flakes become larger, while smaller flakes sprout from the large ones. Often, the bions arrange themselves in groups. The larger the flakes become the darker they turn, until they are brown or almost black.

3. *Orgonotic attraction and sterilizing effect:* The orgone flakes act like any other strongly bionous matter examined thus far. Brought together with rot bacteria, they kill or at least paralyze the latter; this effect takes place *at a distance.*

4. *T-degeneration and putrefaction:* Like any other organic or living substance, the orgone flakes degenerate in the form of putrefaction, disintegrating into T-bodies. In strongly degenerated preparations, protozoa develop only poorly, compared with sterile preparations. By repeated freezing, degenerated preparations can again and again be made free of T-bacilli and rot bacteria. This process seems to facilitate the organization of moving protozoa.

5. Dried flakes *burn* in the flame, turning into a black, coal-like substance; i.e., they act like living protoplasm or non-living organic carbon compounds. Even when, without burning them, one merely lets them dry out, and the same black coal-like substance develops, probably through oxidation; it burns in the flame.

6. *Sugar content:* Bion water with a high orgonotic potency has a sweet taste. Burning of the flakes results in an odor like that of caramel. (An exact biochemical analysis is yet to be done).

7. All vessels which have been in contact with bion water or bion earth for a considerable period of time have a *fatty* feel.

8. To weakening procedures, such as autoclavation, the bion water reacts as a living organism would react, that is, with a *decrease of OP,* which increases again only gradually.

9. *Contractility of the free orgone in the bion water:* The appearance of a concentrated yellow spot in the center of the clear ice admits of only one plausible explanation: *The free orgone energy in the freezing water acts exactly like the orgone energy in a freezing organism; contracting, it retracts from where the freezing takes place.* Free orgone energy, then, has the ability to contract; in the process of contraction, matter develops, apparently through condensation. This process requires intensive study.

10. The orgone flakes develop more rapidly into protozoa when one adds T-bacilli to the preparation. Then, one can observe the development of plasmatic spindle forms with a coarse structure, resembling the Ca III formations (*cf.* Chapter VI).

Stages of development of protozoa in sterile bion water free of particles.

Summary:

a) After the thawing of bion water there appear granulated plasmatic flakes of a typically organic form.

b) Many of the single granulae expand into spherical orgone energy vesicles with a strong blue glimmer. Most of these groups of bions conglomerate into larger forms.

c) The spherical bions, in the course of days or weeks, develop into bean-shaped, as yet immobile forms.

d) These bean-shaped forms become mobile in two ways: At a magnification of 3-5000x the content of the energy vesicles shows fine movements of expansion and contraction; the forms stretch out more and more, the membranes becoming softer, and they begin to move from place to place. Those forms which have become strongly elongated develop serpentine or corkscrew-like movements. The following drawings are from life at a magnification of about 240x, and of apparent size:

e) If one inoculates protozoa-containing bion water fluid into sterile bion water, the protozoa increase in the same way and can be reinoculated again and again. These protozoa I termed *orgonomia.*

Some control experiments:

1. Freezing of ordinary, *non-sterile* spring water or of distilled water produces neither flakes nor protozoa. The organization of plasmatic matter, therefore, is to be ascribed only to the high orgone content as determined by the fluorophotometer.

2. If one *distils* bion water of about 40 to 50 OP, one finds some flakes *immediately after cooling,* and numerous flakes after freezing. This is further confirmation of the statement made under (1).

3. Since sea water is extremely rich in orgone, the fact is understandable that it, also, results in flakes and protozoal growth after filtration and autoclavation. However, there is a riddle here: Sea water taken at Jones Beach, on the Atlantic shore of Long Island, N. Y., shows, about 1 hour after being taken, an OP of only 8 to 10. Earth bion water of such low OP results in no or only poor bion growth; it remains to be explained, therefore, why in sea water the low OP makes no difference. The phenomenon is important; but we cannot understand everything at one time.

4. Water from autoclaved grass also results in flakes after freezing; they multiply and grow.

d) Summary:

1. Like the atmosphere, humus contains orgone energy. Humus itself consists of bionous matter. By increasing the bionous disintegration in water, one obtains an increase also of the orgonotic potency of the water, from a normal value of about 3 to 4 OP up to 25 to 70 OP, compared with the OP (= 1) of distilled water.

2. Orgone energy in high concentration, above about 25 OP, colors water yellow.

3. Orgone energy which at room temperature is equally divided throughout the fluid, contracts under the influence of cold, forming a brownish-yellow core in the ice.

4. Protoplasmatic matter can develop from concentrated free orgone, that is, orgone which is not bound to any particles; from the plasmatic bionous matter, protozoa develop.

5. The process mentioned under (4) apparently is of a general nature and significance: it points to a natural process according to which matter developed from orgone energy, an energy which has to be considered the primordial cosmic energy in general.

6. To judge from Experiment XX, the living plasm of our planet developed *before* the formation of coal substance and carbohydrates. Coal is a secondary product of past life. It follows that the biochemical molecules were not, as is generally assumed, present before the development of plasmatic substance; rather, the biochemical molecule developed in the process of plasmatic organization as one of its mechanical constituents.

Chapter III

THE ACTUAL DISCOVERY OF THE ORGONE ENERGY

1. ABSURDITIES OF THE AIR GERM THEORY

A slogan-like objection to the bion findings is that the bions are "simply the result of air infection." This objection is met by the following arguments:

1. *The bions can be seen immediately after the preparations are made. Air infection, on the other hand, requires many hours in the incubator.*

2. *Bion culture experiments succeeded in an airtight closed system.*

3. *The cultures contained forms which hitherto had not been identified, such as the SAPA bions.*

In order to be able to discuss the manifold questions presented by the cultivation of bions, we have to get rid of the objection of air infection; more than that, the absurdity which lies in the use of this argument must be disclosed, experimentally as well as logically. In the case of revolutionary scientific discoveries, one always has to fight with obsolete concepts rather than with facts.

The formations which I term bions and bion cultures (PA and T) are not found in cultures of air germs. This can be readily demonstrated by the following series of experiments:

a) Dirt is scratched from the palm of the hand with a sterile spatula and put into bouillon. After 24 hours in the incubator there is a *flocculent cloudiness* which disappears again after a few days or weeks, to be replaced by a thin membrane on the surface and a heavy precipitation at the bottom. Microscopically, we find small round or oval cocci and bacilli with a serpentine movement, but no contractile ameboids of the PA type, no cell formations with a nucleus and (in the fresh culture) no T-bacilli.

b) We put a few drops of water from the tap into bouillon.

Often, it takes several days before cloudiness occurs. Microscopically, we find the same types of cocci and bacilli.

c) We leave a small dish with water at the side of a dusty road for half an hour and inoculate on bouillon. There may be no growth at all. If there is, the cloudiness disappears after a few days or weeks, being replaced by a thin membrane on the surface and a heavy flocculent precipitate at the bottom. It may be 48 to 72 hours before any growth appears at all. Microscopically, this consists of small cocci and sausage-shaped bacilli with a serpentine movement. *We find no formations of the type of our cultures (packet amebae or T-bacilli).*

d) We leave a bouillon tube standing open, in a vertical position. After 24 hours, we find cloudiness, which again disappears in time to be replaced by a membrane on top and a precipitate at the bottom. Microscopically, we find again the same cocci and bacilli, *but none of our bion types.*

e) We leave a sterile agar medium in a Petri dish standing open in the laboratory for half an hour. After 24 hours in the incubator, there is a growth, consisting of typical small, non-contractile vesicle heaps. Occasionally, there are bacilli. None of our bion types can be found. If we leave the plate open only for such a short period as is necessary for an inoculation, we easily convince ourselves that it is extremely difficult to effect an air infection.

f) With a spatula, we take dust, say, from the top of a closet and put it into bouillon plus 1/10n KCl, that is, we subject it to the same conditions as prevail in the case of bion cultures. Again we find the same thing. There is growth after 24 hours, or not until after 48 or 72 hours. There are no bions, but elongated bacteria and small, non-contractile cocci. Inoculated on agar, the culture usually results in nothing but the previously mentioned bacilli with a serpentine movement. Like all other non-sterile cultures, it produces a membrane and a flocculent precipitate. Egg medium shows massive dust infection, usually mold.

These control experiments concerning the question of air infection, which can be varied in any number of ways, demonstrate two facts:

1. There are, in the air, only certain forms of large bacilli and small cocci.

2. It is not possible to cultivate bions directly from the air in bouillon or on agar or egg media.

They reveal a third fact: the danger of air infection is not as great as those who use the theory of air infection as a defense against the bionous organization of non-living matter might wish to have it.

After thus having convinced ourselves, from two sides, that our bion cultures have nothing to do with any "air germs," we shall subject the concept of "air germs" to a critical evaluation. Let us summarize what follows from the contention that protozoa can derive from nowhere but germs existing in the air:

1. *Every kind of protozoon or bacterium requires a definite kind of germ.* In other words, there are *as many kinds of germs as there are micro-organisms, that is, millions of kinds.* This contention is contradicted by the fact that, in cultivating air germs, one obtains only a minimal fraction of the forms actually known by pathology. There are a number of questions here which the advocates of the air germ theory would have to answer: Has it ever been possible to cultivate cholera vibrios, pest bacilli or syphilis spirochetes directly from the air? The fact is that these forms have been obtained only from animal tissues. If, then, there are forms of microbes—and now, also of bions—which cannot be obtained from the air, the hypothesis of air infection is invalid.

2. Refutation of the metaphysical air germ theory. The bion experiment demonstrated the fact that protozoa develop from vesicularly disintegrating moss through natural organization. Contrary to this, the metaphysical germ theory contends that protozoa develop from germs which are present in the air and grow where conditions are favorable for the growth of protozoa. Not one advocate of this theory has ever been able to demonstrate the existence of these germs. The incorrectness of this theory can be demonstrated experimentally as follows:

If the protozoa derived from germs *attached to* the moss or hay, developing from the germs in the infusion in a few days, this could be proved by the following experiment: Hay or moss is

washed in water in such a way that not the smallest particle of hay or moss remains. This can be done by letting the water run through a filter on which the hay is placed, or by drawing some stalks through the water several times with a pincer. The water, thus "inoculated with germs," shows no trace of protozoal growth. In an infusion of hay or moss, on the other hand, one observes the progressive swelling of the plant tissue and every stage of protozoal development from the first vesicular disintegration to forms growing out of the tissue and finally the fully formed, detached protozoon. If the advocates of the air germ theory wish to continue to adhere to it, they will have to take the pains of demonstrating experimentally that the germs from which the protozoa allegedly grow can be isolated from the matter to which they adhere and can be made to develop into protozoa.

Let us assume for a moment that it would be possible to find all known forms of microbes, and the newly found bions, in the air. Would, in that case, the term "air germs" provide a scientific *explanation* for the origin of all these forms? It would not. One might rightly ask: True, these forms exist in the air, but, *whence and how did they get in the air?*

If we give some thought to this question, we must admit the scientific untenability of the air germ theory. If our contention is valid that micro-organisms develop from disintegrating inorganic and organic matter, then we have a valid answer to the question *where the germs in the air originate*. The air also can contain nothing but inorganic and dead organic matter. Also, nobody has as yet *seen* the germ of an ameba or of a paramecium. This fact is camouflaged by such absolute theological theses as "Omne vivum e vivo" ("Every living thing comes of living matter") or "Omnis cellula e cellula" ("Every cell comes from a cell"). In the light of our findings and considerations, such theses cannot be taken seriously as scientific statements; they are, rather, affective defenses against facts to the contrary.

After having made clear the absurdity of the air germ theory as it governs medical thinking, we shall try to show how detrimental this theory is for the understanding of many phenomena of utmost importance in medicine, how, by talking away natural

organization, medicine deprives itself of any possibility of seeing simple and obvious facts, to study them in detail and to apply them in practical therapy.

1. Medicine knows that independent, biologically functioning living organisms are constantly being formed in the animal organism, as, for example, the red and white blood corpuscles in the bone marrow and the lymph system, the ovum and the spermatozoon in the epithelia of the gonads. The non-agreement of this *recognized* fact with the germ theory, peculiarly enough, does not seem to have struck the scientists. Erythroblasts are formed, and from them erythrocytes; the female ovum is formed in the follicle, the spermatozoon from the spermatogonias. *One cell form develops into a basically different one.* Here lies a central question of the whole cancer problem, where also, as we know, independent biological cells develop from others. The formation of biologically independent individuals from *different* biological organisms goes on all the time in the body. Precisely this fact is absolutely incomprehensible without the recognition of the change of organic tissue into independent *protozoal* formations.

2. There are different kinds of micro-organisms on the human mucous membranes and body openings. The intestinal bacteria are assumed to owe their existence to an infection from the outside. Thus it remains a mystery why the *bacterium coli* is found in the colon and not just as well in the throat. Similarly, it is mysterious why pneumococci reach the lungs but not the intestines. More than that, *it is inconceivable why the human race should not have died out long ago, if the air, and with that, the mucous membranes, contain thousands of kinds of deadly bacteria.* One then takes recourse to the magical formula of "disposition." But it is precisely this concept of "disposition" which contains everything that the air germ theory covers up. For example, it is incomprehensible that one finds in cancer tissue freshly removed from the inside of a bone hundreds of thousands of micro-organisms which are cultivable and deadly to mice. How did they get into the bone? The answer, "through innidation from the air in the mucous membranes, and from there via the blood," can hardly be taken seriously, for then we are confronted by the question as to

why the air bacterium, on its complicated wanderings, took root precisely in the cancerous bone and why there did not develop all kinds of infectious diseases in *all* the places of passage? That there are pathogenic organisms in the throat and that they create disease only at certain times and in certain individuals remains a mystery unexplained by such words as "disposition" or "latent virulence," for they are always only words. What matters is to find out what goes on in the *organism* that causes the micro-organism to become pathogenic or not.

3. In the literature, one finds again and again the explanation that certain organisms flourish only on certain media. But it is mystical to assume that the germs of amebae, which would have to be assumed to be distributed equally in the air, would choose stagnant water or the underside of leaves. What is even more peculiar is that these ameba germs should not be able to develop on fresh spring moss, but in great numbers on fall moss. It is easy to see how illogical, inconsistent and away from the facts such thinking is.

4. In the context of these considerations, we may well touch upon a question which is apt to stir up all kinds of emotion. According to the air germ theory, the air is full of cholera and pest bacilli which, under normal hygienic conditions, do not become manifest. Coming from the air, they lead to epidemics which kill hundreds of thousands of people, particularly in overpopulated countries with poor hygiene or in wartime. Should it be possible, we must ask, that in these epidemics *the biological condition of the people*, under the influence of poor hygiene and the horrors of a war, *plays no role at all?* Should it be possible that a bacillus alone is responsible, and not also the living organism which it devastates? Why is the bacillus given so much consideration, and the human organism so little? I fear that it takes less to fight the "air germ" than to fight the biopathies. There can be no doubt that the biopathic condition of the victims of cholera or pest deserves far more attention than the bacillus, the origin of which, incidentally, is entirely obscure.

To summarize: *The air germ theory is not only experimentally shown to be erroneous. It is not only incapable of explaining cen-*

tral phenomena of biology and pathology; more than that, it obfuscates a true comprehension of disease mechanisms. It is a dogma which, like all dogmata, saves one thinking and searching. As we have seen, the bion theory and the findings on which it is based makes a material contribution to the clarification of those problems which are not accessible by way of the air germ theory. We shall now turn to a certain bion culture in which the *physical* discovery of the orgone energy succeeded.

2. THE CULTURES OF RADIATING SAND BIONS (SAPA)

I shall now present the events which lead to the discovery and formulation of the orgone energy and demonstrated the existence of a basic natural force which previously (1933-1939) had only been deduced from the observations of bio-electric emotional reactions, bions and protozoa.

In order to completely refute the objection of air infection, I began as early as 1936 to autoclave the bion preparations for ½ hour at 120°C. In doing so, I found that the bionous disintegration was now even more complete than with swelling alone. The blue bions appeared more quickly, the biological stain reaction (Gram, etc.), was more intense. In May 1937, I began to heat coal and earth crystals to incandescence before putting them into the solution which promotes swelling. This procedure accelerated the formation of bions still further. Now, with complete sterility assured, the bionous disintegration of matter could be achieved within a few minutes. No longer did I have to wait for days or weeks until the process of swelling at room temperature finally resulted in bions. To make the substance swell, I used KOH and potassium chloride. For more than 2 years (1937-1939), experiment after experiment confirmed the bionous disintegration of matter and the organization of bacteria and cells from the bions.

In January 1939, one of my assistants demonstrated the heating experiment to a visitor of the laboratory. She took the wrong container from the sterilizer, and instead of earth she heated ocean *sand*. After 2 days there was a growth in the bouillon–potassium chloride solution, which, inoculated on egg medium and agar, resulted in a yellow growth. This new kind of culture consisted

microscopically of large, slightly mobile, intensely blue packets of energy vesicles. The culture was "pure," i.e., it consisted of only *one* kind of forms. At 400x they looked somewhat like *sarcinae* as they are occasionally found in water. Examination at 2000-4000x showed forms which refracted light strongly, consisted of packets of 6 to 10 vesicles and measured about 10 to 15 μ. In the course of several months, the experiment was repeated 8 times, and 5 times the same forms were obtained. (*Cf.* figs. 32 and 33, p. 395.)

These bions were termed SAPA (*sa*nd, *pa*cket). They showed some extremely interesting characteristics.

The effect of the SAPA bions on protozoa, bacilli in general and T-bacilli in particular, was much stronger than that of other bions. Brought together with cancer cells, they killed or paralyzed the cells *even at a distance* of about 10 μ. When cancer cells came as close as that to the bions, they would remain, as if paralyzed, in one spot; they would turn around and around in the same spot and finally become immobile. These phenomena were recorded by microfilm.

For weeks, I examined these SAPA bions daily for several hours. After some time, my eyes began to hurt when I looked into the microscope for a long time. As a control experiment, I used a monocular tube; regularly, it was only the eye with which I looked at these cultures that began to hurt. Finally, I developed a violent conjunctivitis and had to see the ophthalmologist. He thought the story "fantastic," gave me some treatment, prescribed dark glasses and prohibited microscopic work for a few weeks. The eyes improved, but now I knew that I was dealing with a radiation. Several months before this occurrence, the Dutch physicist Bon had asked me in a letter whether I had ever observed radiation in my bions. I had to answer in the negative. Bon had been in a feud with his fellow physicists for years because of his contention that life was a phenomenon of radiation.

Now, I was directly confronted with this fact. I did not know how to approach it. Though I had training in the basic theoretical problems of physics, I had never done any practical work with radiation. This created a considerable difficulty but also had its advantages. For this radiation turned out to be something new

with characteristics all of its own. The customary methods of radiation research gave no results. The orgone radiation required the elaboration of special, hitherto unknown methods and apparatus which could be achieved only step by step, by long-continued observation. Routine and schematic methods failed.

In a very primitive manner, I tried at first to test the culture for radiation by holding the test tubes containing them against my palm. Every time I felt a fine prickling, but I was not sure of the sensation. After that, I put a quartz slide on the skin, put some SAPA culture on it, and left it for about 10 minutes. On the spot where the culture had been (separated from the skin by the slide) there developed an anemic spot with hyperemic margin. This experiment I repeated with all my students, whose vegetative reactions I knew well from their training. Those among them who were vegetatively strongly mobile regularly gave a strong positive result; those with less emotional mobility reacted only slightly or not at all. This was a more definite result, but still quite incomprehensible.

So I sought help from the radium physicist of the Cancer Hospital in Oslo, Dr. Moxnes. He tested a culture with the radium electroscope. *There was no reaction.* The physicist declared "There was no radiation." Since his electroscope was designed for radium only, I objected that the negative result meant only that there was no *radium activity*, but not that there was no radiation at all, because there was no doubt about the existence of the skin reaction. True, why the electroscope failed to react, I did not understand. The rapidity of the skin reaction indicated enormous energies. While the reddening of the skin in response to Xray or radium appears only after days, the SAPA reaction appeared within a few minutes: Incidentally, as will be shown later, the negative reaction at the electroscope found its logical explanation.

The following observations clarified the problems bit by bit:

After two weeks, my left palm was strongly inflamed and very painful. The fact that the cultures exerted a biological influence could no longer be doubted.

Gradually, I began to notice that the air in the room where the cultures were kept became extremely "heavy" and that people

who stayed in the room developed headaches if the windows were closed for as short a time as one hour.

One day, in the course of some experiment, I noticed that all metal objects, such as scissors, pincers, needles, etc., were highly magnetic. I could not in the least understand this fact though today it seems a matter of course. I had never observed it before and it was quite unexpected. But after having seen the negative reaction at the physicist's electroscope, I was no longer surprised by unexpected findings.

I tried photographic plates in all kinds of ways: I put culture preparations on top of unwrapped plates in the dark, on plates in plateholders, on plates partly or completely wrapped in lead, with control plates (without cultures) in the same room. To my great surprise, *all* plates which were in the same room as the cultures were fogged. On some plates there was a darkening corresponding to the joints of the wooden plateholders, in others at places where the culture had not influenced the plate but where the lead wrapping had not been tight. *But the control plates in the same room were also fogged.* I could not understand it. It was as if the energy were active around the ends of the plateholder and through the joints. *The radiation seemed to be "present everywhere."* On the other hand, it could have been a matter of an experimental error.

In the course of two decades of clinical and experimental work, I had learned to pay attention to such seemingly incidental ideas as "energy present everywhere." They are inklings of the searching organism, and lead to the goal if combined with rigid objective control. In due time, my inkling was confirmed: *The orgone energy is, in fact, "present everywhere."* But at that time this had no concrete meaning.

The experiment with the photographic plates seemed to bog down. If the effect of the radiation was everywhere, its manifestations could not be isolated and controlled; there was no comparison possible with an object which was not influenced by it. Much later, in the fall of 1940, the photographic demonstration of the SAPA radiation on Kodachrome film succeeded.

I tried observations in dark basement rooms where I kept the

cultures. In order to increase the intensity, I made dozens of cultures. The subsequent observations in the dark were somehow "weird." After the eyes had become adapted to the darkness, the room did not appear black, but *gray-blue*. There were fog-like formations and bluish dots and lines of light. Violet light phenomena seemed to emanate from the walls as well as from various objects in the room. When I held a magnifying glass before my eyes, these light impressions, all of them blue or gray-blue, *became more intense, the individual lines and dots became larger.* Dark glasses reduced the impressions. When I closed my eyes, the blue light impressions continued, nevertheless. This was confusing. I did not know as yet that the orgone energy irritates the optic nerve in a specific manner and produces after-images.

After one or two hours in the basement my eyes hurt and got red. One evening, I spent five consecutive hours in the basement. After about two hours, I could distinctly see a radiation from my palm, my shirt-sleeves and (in the mirror) my hair. The blue glimmer was visible as a slowly moving, gray-blue vapor around my body and around objects in the room. I admit that I felt frightened. I called Dr. Bon in Amersfort, Holland, by telephone and told him of my experience. He told me to protect myself. However, since the radiation seemed to be "everywhere" and seemed to pervade everything, I did not know how I could protect myself.

I had our friend Dr. Havrevold participate in these observations. Without knowing anything beforehand, he confirmed most of my observations. For several months, I subjected one person after another to the skin test and the observation in the dark basement. The descriptions I obtained from all these subjects were so uniform that the existence of the radiation could not be doubted. The most difficult task was that of *distinguishing the objective phenomena in the room from the subjective phenomena in the eye.* In the course of the investigations, however, numerous techniques of making this distinction found themselves. Thus, I had people reach for luminous objects in the dark or tell me where an arm was at a given time; I let the subjects turn their eyes away from the light impression until it disappeared, and then to try to

find it again. The radiation had a highly irritating effect on the optic nerve. A businessman who had gotten a piece of apparatus for me and once took part in the observations, said: "I feel as if I had been looking into the sun for a long time."

This expression on the part of a layman seemed very significant, especially in connection with the conjunctivitis which many subjects developed. One day I had the sudden idea, *sun energy,* and with that, a simple solution to the problem, though it seemed absurd at first glance: *The* SAPA *bions had originated from ocean sand. Ocean sand, however, is nothing but solidified sun energy. The process of heating and swelling had liberated this energy from the matter.* I fought down my emotional disinclination to accept such a conclusion. If the radiation in question had an immediate connection with sun energy, many phenomena found a simple explanation; e.g., the irritation of the eyes, the conjunctivitis, the rapid reddening and subsequent tanning of the skin. I had carried on these experiments during the winter and early spring, had not been in the sun, and yet had a strongly tanned body. I felt extremely vigorous and alive. Gradually, I lost the fear of the dangerous sequelae of the radiation and worked with it without any attempt at protection.

The existence of an energy with an extraordinarily intense biological activity could no longer be doubted. The question was, what was the nature of this energy and what methods of measurement could be employed. One of my co-workers told an assistant of the Bohr Institute in Copenhagen about the SAPA bions. She considered the production of bions from sand so "fantastic" that I preferred not to expose my new discovery to a kind of investigation which was biased by disbelief on principle. In addition, I could offer no other starting points for a qualitative and quantitative determination of the energy than biological effects and subjective sensations. The negative reaction of the cultures at the Oslo physicist's electroscope also was still unexplained. In addition, this was just after the press campaign of the Oslo pathologists and psychiatrists against the orgasm and bion research; this campaign had destroyed any possible basis for friendly cooperation. Thus, there seemed to be no avenue of approach to a

quantitative determination. There was nothing to do but to leave everything to the spontaneous development of the facts and to chance. This "chance" was not long in coming.

While waiting for it, I spent my time reproducing well-known electroscopic phenomena obtained by rubbing various materials. One day, I was in the process of rigging up a new experimental arrangement which involved high voltage. As an insulation, I put on a pair of rubber gloves which used to be kept in a glass cabinet in my laboratory. When I came near the electroscope with my hands, there was a strong reaction; the electroscope leaf moved up and then *turned to the side, toward the glass wall of the electroscope and adhered to it.* The fact that insulators can be "charged" was known to me. What was amazing was the lateral deflection of the leaf and its tenacious sticking to the glass: non-magnetic aluminum adhered to the glass; glass which is an insulator and which *had not been rubbed.* Whence this effect? It turned out that the gloves had been lying close to a pile of SAPA cultures. As a control I put one glove in the open air in the shade while I experimented with the other, exchanging the two after a while. It was shown that the glove which had been kept in the open air for about 15 minutes did not influence the electroscope; on the other hand, if a previously neutral glove or other rubber object was kept together in a metallic enclosure with the cultures for about ½ hour, it gave a strong electroscopic reaction. The result was the same on a number of consecutive evenings.

Rubber gloves, paper, cotton, cellulose and other organic substances took up an energy from the cultures which gave a reaction at the electroscope. High humidity, ventilation in the shade and touching the substances with the hands for several minutes eliminated the effect.

A first point of departure for the qualitative comprehension of the radiation had been won. The fact that the cultures charged the rubber and other organic substances could not be doubted; I could charge them at any time by bringing them in contact with the cultures and discharge them by ventilating them or putting them in water.

The situation became more complicated when I obtained *new*

rubber gloves and found that they, too, gave a reaction at the electroscope, though they had been neither rubbed nor brought into contact with the cultures. That meant that the energy was present not only in the cultures, but "elsewhere" too. This finding disturbed the unequivocal nature of the culture reaction, but seemed important. Again I had the inevitable impression: *the energy is present everywhere.*

Here, the statement of one of the experimental subjects, "I feel as if I had been looking into the sun for a long time," came to my aid. *Apparently, the energy had to do with sun energy. If it was present everywhere it had to come from the sun, too.* This suggested the experiment of exposing uncharged rubber gloves to bright sunlight. After 5 to 15 minutes, *it regularly gave a strong reaction at the electroscope.* Now, I had double proof of the solar origin of the energy: first, the consideration that the experiment of heating sand to incandescence had liberated solar energy from the sand; second, the direct charging of insulators by the radiation of the sun. Long-continued irradiation of insulators with ultraviolet light had the same effect.

Further consideration said that if the energy in question was emitted by bions and by the sun, then it was also present in the living organism. I put uncharged rubber gloves on the abdominal skin of a vegetatively very mobile patient. The result was positive: after 5 to 15 minutes' contact with the abdominal skin, the rubber gave a strong reaction at the electroscope. I repeated the experiment with a number of students and patients. The result was positive every time. In biophysically sluggish persons and people with poor expiration the reaction was weaker. Increased respiration made it stronger.[1]

Now, several previously obscure facts became understandable. Obviously, I was dealing with an unknown energy with a specific biological activity. This energy originated from matter which was heated to incandescence and made to swell; it came about probably through disintegration of matter (as in the case of the radiating bions). It was, furthermore, radiated into the atmos-

[1] *Cf.* "Drei Versuche am Statischen Elektroskop." Klin. und experim. Berichte, Nr. 7, 1939.

phere by the sun; consequently, it was "present everywhere." This solved the seeming contradiction that the rubber was not only charged by the SAPA bions, but that rubber which had not been exposed to the cultures also gave a reaction at the electroscope.

The newly discovered energy is present also in the living organism. *The living organism takes it up from the atmosphere and directly from the sun.*

It was the same energy with which my blue bions—no matter what their origin—killed bacteria and cancer cells; only here the energy was contained within the small blue energy vesicles.

The energy was called "*orgone.*" This term indicates the history of its discovery, namely, through the orgasm formula, as well as its biological effect (of charging organic substances).

Now I also understood the blue-gray vapors which I had seen in the dark around my head, hands and shirt-sleeves: *organic substances absorb the orgon energy and retain it.*

The electroscope of the Oslo physicist had not reacted to the cultures because the electroscope can be activated *only indirectly, via insulators* which have been charged with orgone energy.

3. THE VISUALIZATION OF THE ATMOSPHERIC ORGONE

In order to study the radiation of the SAPA bions, a closed space had to be constructed which would close in the radiation and prevent it from rapid diffusion into the surroundings. No organic material could be used for this purpose, since, as we have seen, organic material absorbs the energy. According to my observations, metal, on the other hand, would reflect the energy and confine it within the enclosed space. However, the metal would reflect the energy also to the *outside.* In order to avoid this, the apparatus had to have *metal walls on the inside, and walls of organic material on the outside.* With this construction, it was to be expected that the radiation from the cultures would be reflected by the inner metal walls, while the outer layer of organic material (cotton or wood) would prevent or at least reduce the reflection to the outside. The front wall of the apparatus was to

have an opening with a lens through which the energy could be observed from the outside.

The apparatus was built and about a dozen culture dishes were put into it. As a magnifying glass I used a film viewer with a cellulose disk; I assumed that the rays would hit this disk and become visible on it. The experiment was successful. It was possible to observe distinctly bluish moving vapors and light, yellowish points and lines. Several experimental subjects confirmed the observations. The result seemed to be unequivocal. But then a completely incomprehensible fact turned up. It was to be expected that the boxlike apparatus after being ventilated and not containing any cultures, would not show any light phenomena. If that were not so, I could not contend that the radiation came *from the cultures.* I did not have the slightest doubt that a control experiment would confirm this expectation.

However, to my greatest surprise, I found exactly the same light phenomena in the empty box, that is, in the absence of cultures. I assumed that the organic part of the enclosure had absorbed radiating energy from the cultures, and that it was this absorbed energy which showed in the control experiment. I took the box apart, dipped the metal plates into water, put in new cotton, ventilated for several days and tried again. My efforts were in vain. *It was impossible to remove the radiation phenomena from the empty box.* Whence came the rays in the box which did not contain any cultures? True, the light phenomena were not as intense as when the box contained cultures, but they were undoubtedly present.

I had another box built, with a glass wall in front, and without organic material. This box I kept carefully away from rooms in which SAPA cultures were kept. Since this box did not have a wall of organic material, the problem of energy absorbed by such material was eliminated.

It did no good. The phenomena were still there. After a good deal of understandable puzzlement, I remembered that, after all, something similar had happened with the rubber gloves and the electroscope. Rubber, influenced by the cultures, had deflected the electroscope; water and moving air in the shade had elimi-

nated the phenomenon; renewed proximity of the rubber with the cultures had always produced it again promptly. But, rubber gloves which had never been near the cultures, and which had not been rubbed, had also produced the phenomenon. From these observations, I had to conclude that the energy which the cultures emitted must be present everywhere. Now, I had to draw the same conclusion from the fact that the box, without containing any cultures, still continued to show the energy. *Where did it come from?*

Today, at a time when the orgone energy has become measurable and is in practical use with cancer patients, my earlier puzzlement seems unintelligent. After all, I had had the feeling from the beginning that the energy was present everywhere. Too, the experiment of charging gloves on the human skin should have prepared me for the existence of this energy in the box even in the absence of cultures.

Being clever afterwards is easy. During the first two years, however, I doubted every one of my observations. Such impressions as "the energy is present everywhere" or such observations as "spontaneously charged gloves" carried little conviction; on the contrary, they were apt to raise serious doubts. In addition, the continuous doubts, objections and negative findings on the part of physicists and bacteriologists tended to make me take my observations less seriously than they deserved to be taken. My self-confidence at that time—it was just at the end of the infamous Norwegian press campaign that I discovered the orgone—was not particularly strong. Not strong enough to withstand the impact of all the new insights which followed from the discovery of the orgone. So many things began to totter which hitherto had been unshakeable biological convictions: the theory of the air germs; the concept of "body-electricity," the concept that protoplasm was nothing but highly complicated protein, the mechanistic as well as the vitalistic concept of life, etc. Nothing but the logical development of my experiments made me stick.

At a time when the most astounding phenomena have become part of everyday work it is interesting and useful to look back on such uncertainties. It gives one the courage which it takes to go

on in spite of disturbing control experiments; not to kill new findings with superficial controls; *to check up oneself on negative control findings;* and, finally, not to give in to the temptation of taking it easy and of saying, "Oh, well, it was just an illusion." The existence of the new phenomena was beyond doubt. I could not expect to be able to explain all the diverse phenomena at once. Even less could I allow myself to avoid the doubts and emotional upheavals which result from such confusing findings.

The explanation that the energy in the absence of cultures corresponded to the reaction at the electroscope of rubber which had never been near the cultures was, of course, unsatisfactory. There was a void which I was as yet unable to fill.

For several weeks, I kept observing the phenomena in the empty box. It remained the same as I had seen it from the first, rain or shine, fog or clear weather, with high relative humidity as well as low, at night as well as during the day. That meant that the energy could not be the immediate result of the radiation of the sun as was the charge of the rubber exposed to the sun. The energy came "from everywhere"; it was only impossible to say what this "everywhere" was.

In the summer of 1940 I took a vacation and went to Maine. One night, still under the pressure of this unsolved riddle, I watched the sky above the lake. The moon was low on the Western horizon; on the Eastern sky there were strongly flickering stars. I was struck by the fact that the stars in the West flickered far less than those near the Eastern horizon. If the theory that the flickering of the stars is due to diffused light were correct, then the flickering would have to be the same everywhere or even more intense near the moonlight. But exactly the opposite was the case.

I began to look at individual stars through a wooden tube. Accidentally, I focused the tube on a dark blue spot in the sky between the stars. To my surprise, I saw a vivid flickering and then flashes of fine rays of light. The more I turned the tube in the direction of the moon the less intense were these phenomena. They were most pronounced in the darkest spots of the sky, *between* the stars. It was the same flickering and flashing which

I had observed so many times in my box. A magnifying glass used as an eye-piece in the tube magnified the rays. All of a sudden my box lost all its mysteriousness. The phenomenon had found a simple explanation: *The energy in the box, in the absence of cultures, came from the atmosphere. The atmosphere contains an energy of which I had never heard.* It could not be identical with the "cosmic rays." Nobody had as yet seen the cosmic rays with the naked eye. The physicists contend that the "cosmic rays" reach the earth from far spaces of the universe, that, in other words, they do not originate on our planet itself. True, in recent times, objections to this concept have been voiced. If what the physicists call cosmic rays should prove to be of planetary origin, they would be identical with the orgone energy particles. What the physicists call the great power of penetration of the cosmic rays would be simply explained by the fact that the orgone energy *is present everywhere.*

Rudolf W. Ladenburg, in "The Nature of Cosmic Rays and the Constitution of Matter," *Scientific Monthly,* May 1942, states: ". . . The origin of the primaries of the cosmic rays is still a great puzzle. *We do not know the processes responsible for the production of such immensely energetic particles.* Some of them carry a million times more energy than the most energetic particles we can produce artificially. And as to the question of the constitution of matter our answer is still rather incomplete. We know that all matter consists of atoms, that the atoms consist of tiny nuclei surrounded by electrons and that the nuclei consist of protons and neutrons. *There must be strong forces acting between the protons and neutrons holding the nuclei together. But we do not know what they are. They are not of electrical nature* as we have seen, and many theories have been tried for understanding these forces. The discovery of the meson in the cosmic rays has raised some hope for reaching the goal, but this fundamental problem is still far from being solved." (Italics are mine.—W. R.)

I trained the tube on earth and rock and found the same phenomena, stronger in one place, less pronounced in another. The clouds showed it also, only more intense. I realized that in the

course of my control experiments on the SAPA radiation I had discovered the *atmospheric* orgone energy.

I shall attempt to give a systematic description of the orgone energy in such a manner that everyone can repeat its discovery without having to follow the complicated path over which I was led by my bion experiments. This re-discovery of the orgone will demonstrate many characteristics which are unknown in any other form of energy. Only after a presentation of these findings will we understand the logic which links the "blue bion" and its energy function with the atmospheric energy. Doubtless, the atmospheric orgone could have been discovered without the SAPA bions. But the complicated detour over the bion radiation reveals an insight of far-reaching importance: *The energy which governs the living is of necessity identical with the atmospheric energy;* otherwise, it would not have led to the discovery of the atmospheric orgone. Further investigation will confirm this point.

Chapter IV

THE OBJECTIVE DEMONSTRATION OF THE ORGONE ENERGY

1. "SUBJECTIVE IMPRESSIONS OF LIGHT"?

As children, we used to be fascinated by the light phenomena one can observe with one's eyes closed: small bluish dots would move to and fro in front of our closed eyes. They seemed to come from nowhere and would change their course with every movement of the eyeball; they would move slowly in gentle curves and rhythmically circling movements, somewhat like this:

It would be fun to change the form and course of the dots, e.g., by rubbing the eyes. In this manner, even the color of the dots could be varied: the blue would turn into red, green or yellow. Another part of the game was suddenly to open the eyes, look at a lamp, close the eyes again and watch the after-images. In our imagination, the various forms turned into rainbows, balloons, animal heads or human figures.

As we grew up and studied physics, mathematics and biology, such "games" lost their interest. We had to learn that these subjective visual phenomena were "unreal" and something which had to be distinguished from the objective measurable manifestations of light and its seven colors. These objectively measurable phenomena, in the course of time, drowned out the strong sensations originating in our own organs. These we no longer took seriously. The workaday world required full concentration on concrete tasks; in this, phantasies could be only disturbing. But the subjective light phenomena remained, and many people will ask

themselves whether such definite phenomena as the light impressions one can have with one's eyes closed do not reflect a reality after all. The illusionary character of these visual impressions is not as much a matter of course as it may appear.

We learned that the visual impressions with closed eyes were "only subjective," that is, "not real." Scientific research paid no attention to the problem. The subjective impressions were relegated to the realm of "human phantasy." Human phantasy life is at variance with reality and ever changing according to subjective wishes; thus, scientific research had to be based on the objective, realistic basis of experiment. The ideal experiment makes our judgment independent of our subjective phantasies, illusions and wishes. In short, man has no confidence in his perceptive capabilities. In his investigations he rightly prefers to depend on the photographic plate, the microscope or the electroscope.

But in spite of all the progress brought about by our turning from subjective experience to objective observation, it also made us lose an essential quality of research. True, what we observe objectively is existing—but it is unalive, dead. In the interest of scientific objectivity, we have learned to kill the living even before we proceed to make any statements about it. Thus we build, of necessity, a mechanical machine-like picture of the living, a picture in which is lacking the most essential quality, the specific aliveness. The aliveness reminds us too much of the intense subjective sensations of our childhood. These subjective vegetative sensations are at the basis of every kind of mysticism, be it Yoga, or the fascist "surging of the blood," or the reaction of a spiritist medium, or the ecstasies of a dervish. Mysticism asserts the existence of certain forces and processes which natural science denies or looks at with contempt.

Simple consideration says: *Man cannot feel or phantasy anything which does not actually exist in one form or another. For human perceptions are nothing but a function of objective natural processes within the organism.* Could there not be a reality behind our "subjective" visual impressions after all? Could it be possible that in these subjective impressions we perceive the biological

energy within our own organism? Let us see whether this idea is as strange as it seems.

To do away with the subjective visual impression by calling it "phantasy" is erroneous. This "phantasy" takes place in an organism which is governed by certain natural laws; therefore, it must be *real*. We are only just emerging from a period in which medicine called all functional and nervous complaints "unreal" or "imaginary," because they were not understood. But a headache is a headache, and a visual impression is a visual impression, whether we understand it or not.

Of course we will reject the mystical assertions which are based on the *misinterpretation* of plasmatic sensations. But that does not justify denying the existence of these sensations. We also have to reject a mechanistic natural science because it divorces the sensations from the natural processes taking place in the organs. *Self-perception is an essential part of the natural life-process.* It is not nerves here, muscles there and sensations in a third place; rather, the processes taking place in the tissues form an indivisible *functional unity* with their perception. This is, indeed, one of the essential guiding lines in our therapeutic work. Pleasure and anxiety represent a certain state of functioning of the total organism. We have to distinguish clearly between functional thinking and mechanistic thinking which cuts things apart and will never grasp living functioning. Let us put down four important principles of a *functional* concept of nature:

1. Every living organism is a functional unit; it is not merely a mechanical sum total of organs. The basic biological function governs every individual organ as it governs the total organism.
2. Every living organism is a part of surrounding nature and functionally identical with it.
3. Every perception is based on the consonance of a function within the organism with a function in the outer world; that is, it is based on orgonotic harmony.
4. Every form of self-perception is the immediate expression of objective processes in the organism (psychophysical identity).

Nothing is to be expected of the philosophical speculations concerning the reality of our sensations as long as the principle is not

recognized that the perceiving *subject* and the observed and perceived *object* form a *functional unity*. Mechanistic science splits up this unity into a *duality*. The mechanistic empiricism of science of today is hopeless, for it excludes sensation completely.

Every important discovery originates from the subjective experiencing of an objective fact, that is, from orgonotic harmony. It is only a matter of making the subjective sensation objective, of separating it from the stimulus and of comprehending the source of the stimulus. This is something which we, in our orgone-therapeutic work with the patient, do many times every hour in the process of comprehending the bodily expression of the patient. In this process, we identify ourselves with the patient and his functions. After we have comprehended them emotionally, we let our intellect work and thus make the phenomenon an objective one.

After this discourse on orgonotic harmony, let us return to our infantile phantasies and visual impressions. How can we decide *objectively* whether or not our visual impressions with closed eyes correspond to objective processes?

2. THE ORGONOSCOPE. THE FLICKERING IN THE SKY MADE OBJECTIVE

To begin with, let us try to find out whether similar phenomena can be observed with open eyes and in daylight. If we take plenty of time and observe carefully, we find that this is the case. If we look at a wall or a white door we see a *flickering*. It is as if shadows or fogs were moving more or less rapidly and rhythmically. We resist the temptation of doing away with this observation by calling it "merely a subjective impression" and make up our minds not to give up until we have found out *objectively* whether this flickering is taking place in our eyes or outside of our organism.

To begin with, it is not easy to think of a method of differentiating. We close our eyes. The flickering disappears but is replaced by the movements of forms and color. If we repeat the closing and opening of the eyes, we finally realize that the phenomena are *different* when we have our eyes open from when we have them closed.

We look at the blue sky, looking "as if in the far distance." At

first, we see nothing. But if we continue to look carefully, we find to our amazement that the sky shows quite clearly a rhythmical, wave-like flickering. *Is this flickering merely in our eyes, or is it in the sky?* If we follow the phenomenon on different days, under varying weather conditions and at different hours of the day, we find that the kind and intensity of the flickering varies a great deal. In order not to be disturbed by the diffuse light which strikes our eyes from all sides, we repeat our observation at night. The flickering is *more distinct*. It is as if waves ran across the sky. Occasionally, we see a lightning-like dot, line or luminating area. The flickering can also be seen on dark clouds. If we continue the observation of the sky over a period of weeks, we notice variations in the flickering. On some nights it is only slight, on other nights very intense. The astronomers ascribe the flickering to "diffuse light." We used to accept this explanation as thoughtlessly as many others. But now we must ask ourselves whether the flickering of the stars could not have something to do with the flickering in the sky *between* the stars. Should this be the case, we would have the first indication of the objective existence of a moving unknown something in the atmosphere. Certainly, the flickering of the stars is not a subjective optical phenomenon. The astronomers build their observatories on great heights in order to exclude the flickering of the stars. If it were due to "diffuse light," it would be constant all the time. The variation in intensity cannot be explained on the basis of "diffuse light." The unknown something which makes the stars flicker must be moving close to the surface of the earth. It cannot be diffuse light. Such "explanations" only serve to hide the facts. Let us postpone the answer to the problem.

In these observations of the sky, it becomes necessary to delineate a small field of observation. We look at the sky through a metal tube about 2 to 3 feet long and 1 inch in diameter. Through it, we see a circle which appears *lighter* than the surrounding sky. If we keep *both eye open* and look through the tube with one eye, we see the dark blue night sky and in it a disk of a lighter blue. *Within the disk, we see a flickering and then rapidly appearing and disappearing dots and lines of light.* Close

to the moon, these phenomena are less pronounced; it is all the more distinct the darker the general atmospheric background.

Are we again the victim of an illusion? In order to decide this question, we insert an eye-piece with a magnification of about 5x into the tube. Now, the light disk appears larger, the dots and lines are larger and more distinct. *Since we cannot magnify subjective optical impressions, the phenomenon must be objective.* We have now delineated a field of observation and are able to observe the phenomenon under conditions which exclude the objection that it is a matter of diffuse light. In addition, the light disk appears within a black field formed by the dull inside of the tube. The inside walls of the tube show no flickering; it is strictly limited to the light disk; thus, no "subjective" sensation. Without intending to, we have constructed a primitive *"orgonoscope."* We can improve on it in the following manner:

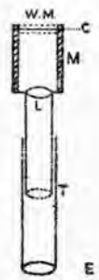


Fig. 6. Orgonoscope

C: cellulose disk, outside surface dull
W.M.: wire mesh, on both sides of disk
M: metal cylinder, about 4" long, 2" wide
L: biconvex lens, about 5x, focused on disk
T: telescopic tube, 1 to 2 feet long, about 2" wide
E.P.: eye-piece, 5-10x, for additional magnification

We put our tube in front of the mirror of a good microscope with apochromatic lenses, using a 10x object lens and 5x eye-piece. Our eyes have to be adapted to the dark for about half an hour. The microscope shows the light phenomena in the sky very clearly. Every single lightning-like dot is clearly discernible. If we take the eye-piece out of the tube, the flickering is seen on a

smaller scale, but stronger; we no longer can distinguish individual dots.

Are the phenomena perhaps to be ascribed to the haze in the atmosphere? If we observe during a foggy or hazy night we find that the phenomena are absent or hardly perceptible. In other words, fog or haze does not produce flickering. *The motion of the light in the field of the microscope or the tube has nothing to do with moving fog.*

On detailed observation, we find that the light phenomena are present all over the sky; they only decrease close to stars or the moon because of the stronger light. They are most intense during clear nights with a low relative humidity and during sheet-lightning. If the humidity of the air exceeds 50%, the phenomena decrease in intensity. That is, *humidity absorbs the radiation in the atmosphere,* just as it absorbs the SAPA radiation.

We train our tube at night on various parts of the ground, the sidewalk, loose soil, the lawn, a wall, etc. We see the same movements of light particles. They are more intense on the soil than on the pavement. We look at shrubs at a distance of about a foot, moving the tube sideways toward the shrub and away from it. There can be no doubt that the phenomena are more intense at the leaves than in the surroundings. They seem to emanate from the leaves themselves. We observe flowers. The radiation is more intense at the blossom than at the stalk.

Soil, walls, shrubs, grass, animals, the atmosphere, etc., show the same phenomena, only in different intensities. The conclusion from these findings is inevitable: The orgonotic phenomena are present everywhere. They vary only in density and intensity. We may have wished to find it in one place and not in the other. Then the whole thing would have been a minor and harmless discovery. But we have to follow the facts, no matter how weird they begin to look to us.

3. THE CONSTRUCTION OF A RADIATING ENCLOSURE. OBJECTIVE VISIBILITY

The fact that the orgone energy is present *everywhere* presents a difficulty in experiment. In order to properly describe a phenomenon, we must isolate it and comprehend it by *comparing* it with something different. We have to construct an enclosed space in which we can separate the energy.

We try to see whether we can find out anything new in a completely darkened room. We adapt our eyes to the darkness for about half an hour. During this time, all subjective light impressions disappear. We see nothing but black, that is, nothing. We look through the tube; we see nothing. In other words, we only confirm the common experience that in an absolute darkroom there is absolute blackness. The energy disappeared, and we are inclined to give up the "crazy idea." But to follow this inclination would mean not doing research. We cannot simply disregard the fact that on the outside we had established the existence of this peculiar manifestation beyond any doubt. It cannot have simply disappeared. But being convinced of something is one thing; *proving* it is another.

Since we do not know the properties of our atmospheric energy we have to work with apparatuses such as are used in working with known energies. We might use a "Faraday cage," i.e., a room the walls of which are formed of copper wire mesh. Such a room is free of electromagnetic fields because all electromagnetic waves coming from the outside are caught by the wire net and are grounded. We observe the same principle when we cross a bridge with a metal superstructure in our car: the radio stops working. In this cage, delicate oscillographic experiments can be carried out without interference.

We build such a cage, say, in a corner of the basement. In order to reduce the connection between inner and outer air to a minimum, we build the inside walls of sheet iron, leaving only a few cracks to admit sufficient air for breathing. We sit in the completely dark metal room and adapt our eyes.

In the course of about half an hour the complete darkness gives way to a vague blue-gray shimmer. Our eyes are irritated by peculiar light phenomena. It is as if vapors of a gray-blue color were slowly moving through the room. When we fix our eyes on a certain spot on the wall, we see moving light particles. The longer we stay in the room the more distinct the light phenomena. Within

the gray-blue vapors we can distinguish light dots of a deep *blue-violet* color. They are reminiscent of the well-known subjective visual phenomena previous to falling asleep. We begin again to wonder whether the phenomena are inside or outside of our eyes. When we close our eyes, the blue-violet dots do not disappear. Are our optic nerves irritated, or are the light phenomena *not real*? One would expect them to disappear with the closing of the eyes and to reappear with opening them. On the other hand, there are subjective after-images. It is all not so simple. We must ask ourselves: how is it possible for our optic nerves to become irritated in complete darkness, and why can we not get rid of the phenomena in our eyes?

The longer we observe the more pronounced are the phenomena. In dry air after sunny days, we observe lightning-like flashes in the metal room. These phenomena are most impressive. Therefore, I advise my students to study the natural orgonotic phenomena in the metal-lined darkroom thoroughly, in order to convince themselves beyond any doubt of the existence of the atmospheric orgone energy.

Many experimental subjects develop a conjunctivitis after an hour or more in the Faraday cage. Since, normally, the eyes rest in complete darkness, there must be something in the cage which excites the optic nerve and irritates the conjunctiva.

We repeat our observations in the dark cage, trying to find ways and means of answering some of the questions that arise. For example: Can the bluish-gray and violet light manifestations be magnified with a magnifying glass? We find this to be the case. As they become more distinct, we observe that the violet light dots appear in two forms: they either fly in our direction or past us. In the first case, there is a succession of the following impressions:

Every light dot seems to become alternatingly larger and smaller, as if it were pulsating. If the light dot flies past us, we have a trajectory something like this:

We may call this trajectory, according to its shape, a spinning wave (*Kreiselwelle*). Its significance will have to be discussed later on. The violet light dots seem to come from the metal walls in *rhythmic* sequence.

After a considerable time—2 to 3 hours—in the cage, we find a bluish-gray shimmer around our white coat and are able to see the contours of another person, even though only vaguely. Let us not be led astray by the "mystical" and "spooky" impression of this phenomenon. There is nothing mystical about it. The energy seems to adhere to substance, such as cloth and hair. We put some good fluorescent material, such as zinc sulfide, on a swab of cotton and fasten this to the wall. Our observation had been correct. The region of the cotton swab appears lighter than its surroundings. The magnifying glass makes the radiation more distinct; we see flickering the fine rays.

Another observation: A paper disk with a layer of zinc sulfide had been lying in the cage for several days. When we bend it, it emits a strong radiation. For a control, we expose another such disk to fresh air, or we continue the bending for a considerable period of time. In either case, the light phenomena disappear. We leave one of the disks again in the cage for several days. On bending, the light phenomena are again present. That means, that *the paper disk has absorbed orgone*.

We now try to make the orgone in the cage *visible from the outside*. For this purpose, we cut a window about 5 inches square in the front wall of the cage. On the metal inside, we put a fluorescing glass plate across the opening, such as is used, e.g., to make Xrays visible.[1]

In the opening of the exterior wooden wall we put a tube con-

[1] Fluorescence, as distinct from luminescence, means light from substances which are influenced by invisible energy particles. In the case of luminescence, the light continues for longer or shorter periods of time even after the substance has been removed from the effective rays. Zinc sulfide is a fluorescent substance, calcium sulfide a luminescent substance.

taining a biconvex lens of a magnification of 5 to 10x. The tube with the lens is removable so that the fluorescing disk can be observed both with and without magnification.

Inside the cage, we mount a green bulb such as is used in developing highly sensitive photographic plates. This bulb gives a steady dim light as a background for the orgone radiation. A rheostat connected between electric outlet and green bulb enables us to obtain the optimum in dimness of the light. In this arrangement, we follow a hint given by nature: the orgone radiation is clearly visible against the dimly lighted night sky.

In order to reproduce the flickering of the stars, we drill a few holes of about ⅛" in the wall. Now, we observe the cage from the outside in complete darkness.

The light which we perceive through the holes is not steady, but *flickers strongly;* it is not green, but *bluish.*

On the fluorescing disk, strong motion can be observed. There is rapid flickering, and individual lightning-like dots and lines. As time goes on, we can distinguish vapors of a deep violet color which seem to emanate from the openings. The square where the rays are visible is sharply defined against the black surroundings. The flickering is visible only within the square. The magnifying glass makes it possible to distinguish individual rays. On clear, dry days the phenomena are more intense and distinct than on humid or rainy days. The observation of the rays within the Faraday cage is greatly improved through the use of the orgonoscope.

How does the energy get inside the cage? After all, the wire mesh is supposed to *ground* all electromagnetic energy. The inside of the cage should be free of any charges; if it were not, one could not carry out delicate electrical experiments in it without interference by electromagnetic forces. We find ourselves confronted by another problem:

Can the energy in the cage possibly be electricity? We have a double task before us:

1. To comprehend the characteristics of the orgone energy, now made visible.
2. To investigate the connection between orgone and electricity.

4. THE ORGONE ACCUMULATOR

At this point, I have to answer a question which the attentive reader is bound to ask: How is the concentration of the atmospheric orgone brought about, and how is it measured?

These questions cannot be answered here as extensively as they deserve. The orgone is a newly discovered form of energy, totally different from electricity and magnetism. Its study is the task of orgone physics in the field of inanimate nature. This study is as yet very incomplete. Though the reader may be acquainted with the concepts of electrophysics, he will have to realize that they are not applicable to the orgone. The new physical concepts deriving from the orgone experiments will have to be presented separately. What interests the reader in the present context is the mechanism of the accumulation of the energy and the methods of measuring it. At the risk of being misunderstood and misinterpreted by electrophysicists, I shall mention three basic facts which demonstrate the concentration of the atmospheric orgone in the orgone accumulator and which make the measurements possible.

a) The mechanism of the concentration of the atmospheric orgone.

The orgone accumulator consists of an outer wall of organic material such as wood or celotex and an inner wall of sheet metal. The walls can also be built of two, three and more layers, each consisting of organic material outside and metal inside. This arrangement is sufficient to achieve an orgone concentration many times greater than the atmospheric concentration. The mechanism of this concentration is based on two facts:

a) *Organic material attracts orgone and absorbs it.* Conversely, orgone-containing organic material attracts small organic particles and holds them in a state of attraction.

b) *Metallic material, especially iron, also attracts orgone, but repels it again rapidly.* Conversely, orgone-containing metallic material repels metallic particles.

These two basic orgone-physical facts can be experimentally

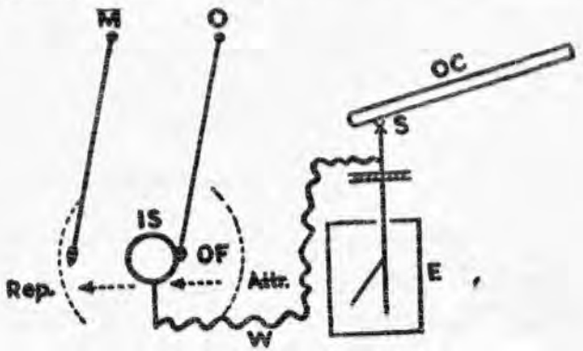


Fig. 7. Demonstration of the orgonotic attraction of organic material and the repulsion of metallic material in the orgone energy field of a metal sphere.

O: organic material.
M: metallic material.
OF: orgone energy field.
IS: iron sphere.
Attr.: attraction.
Rep.: repulsion.
E: electroscope (orgonometer), grounded or not grounded.
W: wire connection.
OC: orgone carrier (polysterene rod).
S: spark to the tip of the electroscope.
←: direction of deflection.

demonstrated and reproduced at will in the manner illustrated above.

Under a glass hood which protects the arrangement from air currents, a metal sphere is set on a rubber or cork plate. On one side of the equator of the sphere, at a distance of about 2-3 mm, we suspend a small piece of cork, on the other side, at the same distance, a small piece of tinfoil. The metal sphere is connected by a wire with an electroscope.

We then charge a polysterene rod by stroking it once or twice, *without rubbing*, over our hair. The rod is then brought near the metal point of the electroscope which is connected with the sphere. If the orgone charge of the rod is sufficiently strong (and the relative humidity of the air not over 50%), the cork will move

toward the metal sphere and will adhere to it for a shorter or longer period of time. This means: *the orgone energy in the rod has led to the formation of an orgone energy field (OF) around the metal sphere, in which organic material is attracted and held fast.* In connection with other experiments, this statement can be reversed: organic material attracts and absorbs orgone energy.

A non-charged polysterene rod does not influence a piece of tinfoil. *An orgone-charged rod, however, will attract the tinfoil and hold it fast.*

From this it follows: *Orgone energy and organic substances attract each other; so do orgone-charged organic and orgone-charged metallic substances.*

At the other side of the sphere we notice what happens with the tinfoil when we approach the charged rod to the electroscope. We observe that the effect on the tinfoil is different from that on the cork. The tinfoil is *first attracted* toward the metal sphere but immediately *repelled* and *held at a distance*. That is, *two metallic substances in the orgone energy field repel each other*. From this it follows also that *metal attracts orgone, but,* instead of absorbing it, as organic material does, it *repels it*.

These findings are fundamentally new. They have a relation to what is called "friction electricity" and to the confused theory of "static electricity." These connections have been extensively dealt with elsewhere. This simple experiment demonstrates two basic functions of the orgone energy: *attraction* of organic substances and *repulsion* of metallic substances in the orgone energy field.

The implications of this experiment for the orgone accumulator will become obvious in the following:

b) Thermical orgonometry.

The metal walls of our orgone accumulator are "cold." If we hold our palm or tongue at a distance of about 10 cm. from the wall, we feel, after some time, *warmth* and a *prickling* sensation. On the tongue, we perceive a salty taste. If we put a thermometer in the same place (or, better, above the top of the accumulator), and a second thermometer outside of the accumulator, we find to

our surprise a difference of 0.2° to 0.5° C. as compared with the room temperature.

This can *not* be "heat" radiated by the walls of the accumulator. We do not understand this fact; we have to become accustomed not to want to understand individual findings outside of their context. Once we have found a significant connection between two or more findings, we are able to form a bit of theory. Whether that theory is correct or incorrect, complete or incomplete, can only be shown in the course of further work. If the theory is correct, it will inevitably lead to new findings and new connections. If it is wrong, it will inevitably lead into a wrong direction.

Since the temperature at the metal wall is lower than at some distance from it, the warmth which we feel at our palm and which the thermometer registers cannot be heat as such radiated by the wall. There are, indeed, no sources of heat at or behind the wall, within or under the accumulator. We have to venture an assumption and see where it leads us.

As we know, radiation in general consists of *moving energy particles*. Let us assume for the present that the cold metal walls of the accumulator radiate or reflect energy. We must make the following assumption: When we put our hand or a thermometer at a distance of, say 6-10 cm. from the wall, we *stop* the movement of the energy particles. *The stoppage changes the kinetic energy of the particles into heat which causes the feeling of warmth at the hand and the objective temperature rise at the thermometer.* This assumption is in accord with the physics of any radiation; for example, the stoppage of the electrons in an Xray tube, as they fly from the cathode to the anticathode, produces heat and light phenomena.

For our experiments, we build a small orgone accumulator. Six iron sheets of 1 square foot are built into a cube (*cf.* fig. 8, p. 100). At the outside of the top sheet we put a cylinder of about 15 cm. length into which we can introduce a thermometer. A hole beside it makes it possible to read the temperature *within* the box. In order to insulate the inside of the cylinder against the influence of the room temperature, we surround the cylinder with cotton

or another material with low heat conductivity. In addition, we screen the cylinder with a glass lampshade. No organic substance should be placed between thermometer and the metal surface.

The idea behind this experimental set-up is the following: The energy particles *within* the box are being thrown from metal wall to metal wall. They are being stopped on all sides. Since heat ascends, any possible temperature rise will be most readily registered above the top metal sheet. There must be a *temperature difference* between the enclosed air in the cylinder above the accumulator on the one hand and the rest of the room on the other. Let us call the temperature of the air in the room T, that of the cylindrical space To. If our assumptions are correct, the temperature difference (To − T) must be *positive* and *always present.*

Measurements over a number of days reveal a temperature difference between 0.2° and 1.8° C. Measurements taken several times a day over a period of weeks reveal an arithmetic mean of about 0.5° C. Since the box contains no constant source of heat, the temperature difference can be due only to the stoppage of the orgone energy particles. Let us summarize what we have learned thus far about the orgone energy:

1. Organic substances absorb the energy.
2. Metallic substances reflect it.
3. Stoppage of the kinetic energy by any metallic obstacle results in a temperature rise.

This calls our attention to an error in the construction of the box. The metal walls reflect the energy and the heat to the *outside* as well as to the inside. So, in order to provide an insulation against the surrounding air, we cover the metal box with organic material such as cotton. To hold this in place we surround it with a second box of plywood or celotex. The inside of the box is made accessible by a door in the front wall.

The outside of the apparatus consists of organic material, the inside of metallic material. Since the former absorbs the energy while the latter reflects it, there is an *accumulation* of energy. The organic covering takes up the energy from the atmosphere and transmits it to the metal on its inside. The metal radiates the

energy to the outside into the cotton and to the inside into the space of the accumulator. The movement of energy toward the inside is free, while toward the outside it is being stopped. Thus

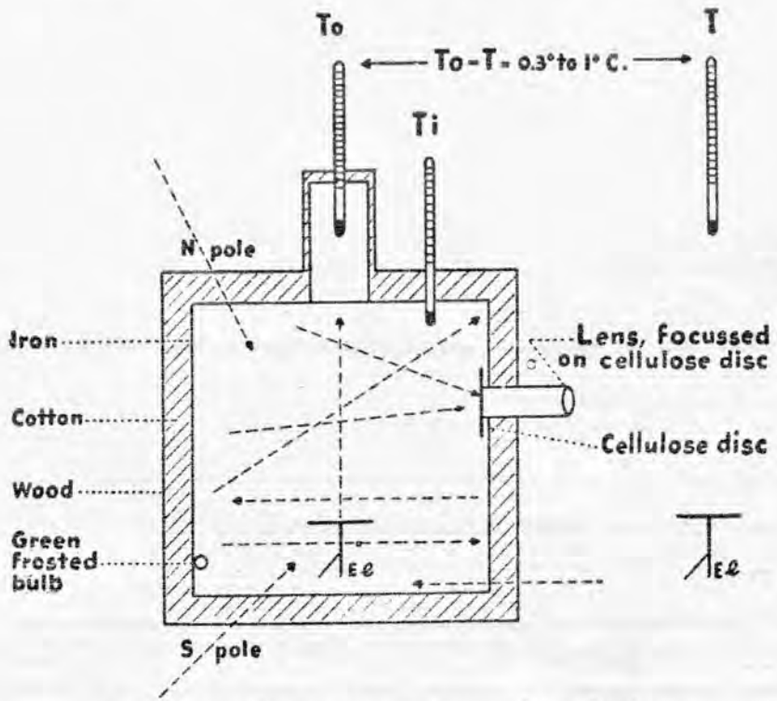


Fig. 8. Basic design of orgone accumulator. Section.

To = temperature above accumulator; Ti = temperature within accumulator; T = control (temperature of air in room).
El = electroscope. - - - - - - → = direction of radiation. Size: 1 cubic foot.

(In accumulators used for orgone therapy the wood is replaced by celotex, and the cotton by a mixture of rockwool and steelwool.)

it can oscillate freely on the inside, but not to the outside. In addition, part of the energy given off by the metal toward the outside is absorbed by the cotton and given back to the metal. In which manner the energy penetrates the metal we do not know.

All we know is that it *does* penetrate it, for the subjective and objective phenomena are far more intensive within the apparatus than on the outside.

After covering the metal with organic material we find that the temperature difference To — T is *more constant* and also *greater*, other things being equal. *We have built an accumulator which confines and concentrates the orgone.*

As a control, we make the same experiment with a box of the same size built of wood or cardboard only. We soon find that in such a box, temperatures are completely equalized: the temperatures are the same everywhere. The temperature differences appear only when the box is lined with metal on the inside.

Orgone measurement in the open air. During the summer months of 1940, I kept a small orgone box partly buried in the ground in my garden. There was a constant temperature difference. But not until the following February did I find out how much greater was this difference than that found in the closed room. On February 15, 1941, a sunny day with a strong cold wind, I buried an orgone box to the depth of two-thirds of its height in the soil. Thus the box thermometer (I) was still *above* the soil level (*cf.* fig. 9, p. 102). The box, including the thermometer casing above it, was in a second box of cardboard; the space between the two boxes was filled with cotton and wood shavings; the whole thing was covered with a wool blanket. (The space in which the temperature is measured, of course, has to be well protected against the low outside temperature.) A control thermometer (II) was put through a hole in the bottom of a glass jar, and this was buried 4 inches deep into the soil, which brought the bulb of the thermometer *below* the soil level. A second control thermometer (III) was stuck about 1 inch deep into the soil, without any covering. This thermometer (IIIa) was also used for measuring the air temperature above the soil, at about the height of the box thermometer, with and without covering as protection against the wind. The drawing (fig. 9, p. 102) and the table on p. 103 show the arrangement and the results.

In this experiment, To — T showed a much higher value than in the inside room, probably because of the elimination of the

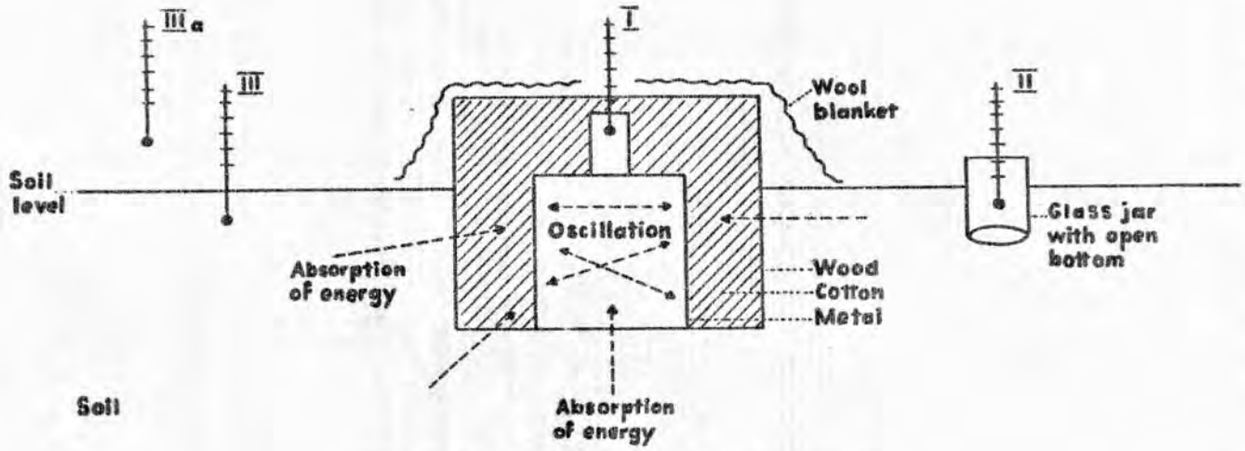


Fig. 9. Measurement of To – T in the open air.

Reading No.	*Weather*	*Time*	*Air*		*Soil*	*Air in Glass Jar*	*T-Org Above Soil*	*To – T Compared with Air*	*Remarks*
		2-16-41	*Free*	*Protected*					
1	Clear; cold wind	12.30 P.M.	3.6°	5°	0.5°	1.5°	11.6°	+8°	Apparatus with thermometer under cardboard cover, except front. Two-thirds under ground, beginning at 12 Noon
2	Clear; cold wind	1 P.M.	3.4°	4.6°	0.3°	1.5°	11.4°	+8°	
3	Clear; cold wind	1.45 P.M.	2.1°	3.5°	0.4°	1.3°	9.5°	+7.4°	
4	Apparatus in shade	2.30 P.M.	0.3°	0.6°	0.4°	1.3°	6.5°	+6.2°	Wool blanket over apparatus
5	Apparatus in shade	3.30 P.M.	0.2°	0.3°	0.3°	1.3°	2.9°	+2.7°	Wool blanket over apparatus Elimination of sun radiation
6	Apparatus in shade Freezing temperature	4 P.M.	–0.6°	0.6°	0.2°	0.4°	+ 0.6°	+1.2°	Wool blanket over apparatus Effect of freezing temperature
7	Apparatus in shade Freezing temperature	5 P.M.	–0.9°			0.2°	0°	+0.9°	Wool blanket over apparatus Effect of freezing temperature
8	Apparatus in shade Freezing temperature	12 P.M.	–2.1°			–0.4°	– 0.4°	+1.7°	Measurements interrupted; wool blanket removed
9	Cloudy	2-17-41 9.30 A.M.	–1°	–1°	0°	+0.7°	+ 1.8°	+2.8°	Apparatus remains in the open overnight; in the morning again covered with blanket
10	Heavy snowfall	11.30 A.M.	–1°	–1°	0°	0.9°	+ 2.3°	+3.3°	Thermometer exchanged with each reading
11	Heavy snowfall	12.15 A.M.	–0.9°	–0.9°	0°	0.7°	+ 1.3°	+2.2°	
12	Heavy snowfall	1 P.M.	–0.7°	–0.7°	0°	0.7°	+ 1.3°	+2°	
13	Heavy snowfall	2 P.M.	–1°		0.3°	0.7°	+ 1.2°	+2.2°	
14	Heavy snowfall	3 P.M.	–1.1°		0.3°	0.7°	+ 1.2°	+2.3°	Thermometer exchanged
15	Heavy snowfall	4 P.M.	–1.2°		0.2°	0.6°	+ 1°	+2.2°	
16	Heavy snowfall	5.30 P.M.	–2°		0.1°	0.2°	+ 0.5°	+2.5°	

secondary orgonotic radiation from walls, table tops, etc. *In the open air and without sun, the difference was about* +2° C.

In order to make doubly sure, I continued the experiment overnight and during the following day, from February 16th to February 17, 1941, in the following manner: I left the apparatus in the open air without the blanket, that is, I let it get completely cooled by the low night temperature. At 9.30 A.M. on February 17th, the air temperature was −1° C., the soil temperature 0° C. I put the cold blanket back on the apparatus and introduced the thermometer which had just registered an air temperature of −1° C. into the cylinder on top. Soon it registered +2.3° C., while the air temperature remained at −1° C. and the soil temperature at 0° C. The air within the buried glass jar showed +0.9° C.

These findings are unequivocal[2] and show the following:

a) *The soil and the atmosphere contain an energy which is thermically measurable in our apparatus.*

b) The energy is measurable in high values only with the use of a *definite arrangement of materials.* That is, in order to obtain an *increase* in the temperature difference (To − T), one must use organic material on the outside and metallic material on the inside.

This experiment also shows the significance of the arrangement of materials in connection with the energy of the soil and the sun. When the influence of the sun radiation is eliminated by shade, the difference To − T decreases, compared with all control measurements, from an average of about +5° C. to an average of about +2° C. The glass-covered control thermometer, which is exposed only very little to the soil orgone, shows a difference of only about 1° C. The orgone accumulator—thus far the most efficient apparatus for the concentration of the orgone energy—shows far higher values, that is, *more than* +2° C.

[2] This particular experiment was done in order to refute a certain objection which had been raised. A physicist tried to explain the temperature difference at the accumulator by "heat convection from the room ceiling to the table top." He failed, however, to check his interpretation of the temperature difference by simply measuring it *in the open air and in the soil* where there cannot possibly be a "heat convection from the room ceiling to the table top." If one does so, one finds that there is a consistent temperature difference which varies only with the weather.

The temperature *decrease* in the open air due to the low night temperature shows in the box in spite of the insulation. Nevertheless, the difference (To − T) remains constant within certain upper and lower limits because of the *parallel* drop of To and T. Observations during about 3 hours showed the following:

To	=11.4°	To	= 9.5°
T air	= 4.6°	T air	= 3.5°
To − T	= 6.8°	To − T	= 6.0°

To	= 6.5°
T air	= 0.6°
To − T	= 5.9°

Summary of experimental results:

1) The apparatus described shows, under all circumstances, a temperature difference between the thermometer above the apparatus and the control thermometer, in the absence of any constant source of heat of any known nature.

2) Measurements in the open air demonstrate a radiation from the soil which, depending on different arrangement of materials, manifests itself in varying differences of temperature.

The temperature difference in the open air varies with the intensity of the sun radiation and with the hours of the day. On sunny summer days, differences up to 20° C. are not rare. (It goes without saying that the orgone thermometer is never exposed to direct sunlight.)

The thermometric measurement of the soil orgone radiation can be done in various other ways. One only has to know the basis of comparison. One can compare To with T air or T soil. The To of the air is different from the To of the soil. Similarly, it makes a difference whether we measure inside a vertical orgone tube without a metal plate or above such a plate in the tube. The diagrams (*cf.* fig. 10, p. 107) illustrate a few methods of measuring the temperature difference.

Summarized, the results are the following:

In a metal tube, the temperature increase is greater above a metal cross-plate than without such a plate.

During rainy weather, the temperature differences are minimal or altogether absent.

With intensive sunshine, they return and reach high values.

In order to get the effect of the *orgone* energy, we leave the tube open. In order to get the *temperature difference,* we close the tube and measure the temperature above the plates.

The far-reaching consequences of the constant orgonotic temperature difference To – T will be obvious to the well-trained theoretical physicist: *the second law of thermodynamics becomes invalid.* True, there is a process in nature in the direction of entropy. It is also true that "the universe is running down"; but there is also another energy process which works in the opposite direction: Orgonotic energy processes in the universe build up energy again which is being lost in the process directed toward entropy. This is a major problem of basic physical theory; it will have to be discussed at greater length in a different context.

Demonstration of orgonotic attraction in the energy field of the orgone accumulator:

Experiment: We bring a good magnetic needle close to an orgone accumulator of 1 cubic foot, in the following manner: a) close to the center of the 4 upper edges; b) close to the center of the lower edges.

Result: The magnetic north pole regularly turns toward the center of the upper edges, the magnetic south pole toward the center of the lower edges.

Conclusion: *The reaction of the energy field of an orgone accumulator is of an orgonotic and not of a magnetic nature.*

Proof: 1. Magnetic attraction is confined to the ends of the iron; the middle is not magnetic.

2. The poles of magnetic attraction (south and north) are not interchangeable, except if one remagnetizes a weaker magnet with a stronger one. If the attraction effect of the orgone accumulator were of an iron-magnetic nature, the magnetic needle would turn toward the center of the edges always in the same way, no matter how we turn the accumulator. This, however, is not the case.

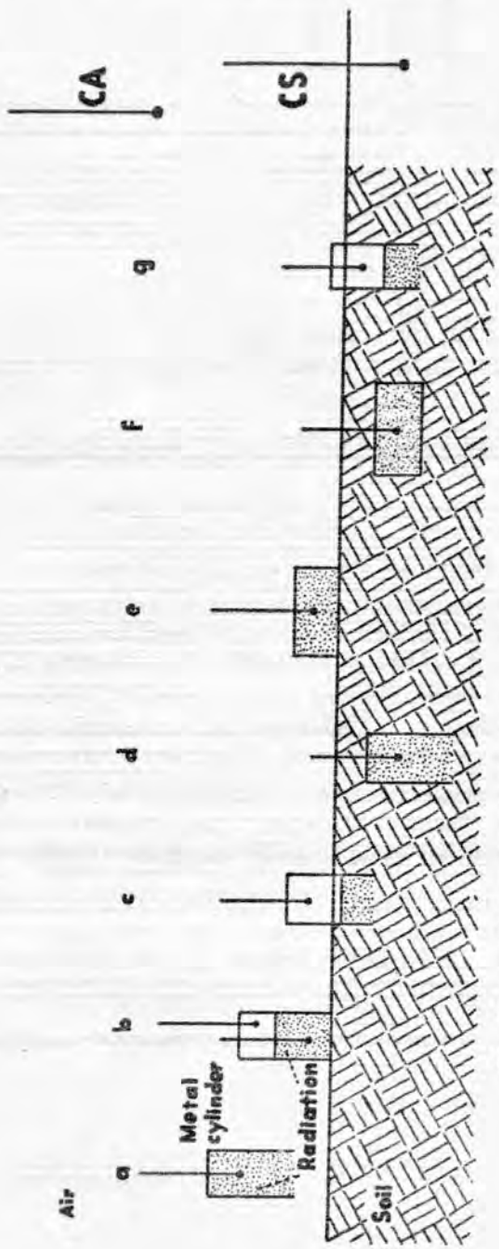


Fig. 10, a-g. Different methods of measuring To – T in the soil and the atmosphere.

Whichever edges we make the upper, lower or side edges, the magnetic needle always reacts as described, that is, it turns with its north pole toward the center of the upper edges and with its south pole toward the center of the lower edges. The attraction effect of the orgone accumulator, then, is not due to definite parts of the material and can, therefore, not be of a magnetic nature. Obviously, the reaction depends on the position of the orgone accumulator in the field of the orgonotic atmosphere of the earth. It follows, under consideration of all experimental and theoretical facts, that the energy field of the earth also is not of a magnetic but of an orgonotic nature and has a definite relationship to the magnetic north and south pole of the earth.

It is likely that magnetism as such will be shown to be a function of the cosmic orgone energy. Many scientists doubt the magnetic nature of so-called "earth magnetism."

c) Electroscopical orgonometry.

The measurements of the temperature difference To — T show that a radiating energy works inside of the apparatus. They say nothing about the *nature* of this energy. Neither do the subjective light phenomena, in spite of the fact that they are very impressive and convincing.

We measure the discharge of the electroscope systematically several times a day over a period of months, within the orgone accumulator, in the room and in the open air. This is done with the following considerations:

Charged electroscopes discharge *more rapidly* in strongly ionized air than in weakly or non-ionized air. "Ionized air" means air which contains negative electric units, or "electrons." The air in a room can be "ionized" by Xrays or ultraviolet rays. Air at high altitudes is more highly ionized than air at sea level. Charged electroscopes discharge *more rapidly* in strongly ionized air because that air forms a conductor between the various parts of the electroscope so that the charge of the metal walls and that of the electroscope leaf are more quickly equalized than in non-ionized air which is not such a good conductor. This is the principle of electroscopic measurements in the investigation of cosmic rays.

In measuring the electroscopic discharge within and without the orgone accumulator, we may expect the following possible results:

1. *The speed of discharge is the same inside and outside.* This would mean that the charge in the apparatus is the same as outside, in other words, there is no concentration of the atmospheric orgone energy inside. In that case, the phenomenon of the temperature differences would be incomprehensible.

2. *The speed of discharge is greater inside than outside.* This would mean that the air within the apparatus is more strongly ionized than on the outside, that is, it contains more negative electrical particles (electrons). In that case, also, the fact that the orgone energy is absorbed by organic materials would be incomprehensible.

3. *The speed of discharge is less inside than outside.* This would mean that our orgone energy is *not* identical with negative electricity. In this case, the fact that the electroscope discharges more slowly inside and why this indicates a concentration of the orgone energy, would have to be explained. Only in this third case would the subjective phenomena, the temperature difference and the speed of the electroscopic discharge become understandable in the same light. In this case, our orgone theory would be considerably advanced, because now several manifestations of the energy would be reduced to *one* principle.

The experiments show, in fact, that the speed of discharge is *less on the inside than on the outside.* We shall postpone the how and why of this observation and simply record this fact. From this we conclude:

1. *The orgone energy tension within the apparatus is different from that outside.* The difference in tension indicates a difference of potential between inside and outside. The question remains whether the drop in potential is from the inside to the outside or vice versa.

2. *The energy within the apparatus cannot be the result of a stronger ionization of the inside air;* otherwise, the electroscope would discharge more rapidly inside, instead of more slowly. That means that the energy is an energy *other than electricity.*

Equally rapid or more rapid discharge within the accumulator would be easy to explain in the framework of known theories. A discharge which is *slower* on the inside than on the outside, however, is difficult to explain.

Here we are aided by the fact that we charge the electroscope from cotton or cellulose or from our hair (provided it is dry) by means of a cellulose disk or a rod of polysterene or rubber. These substances take up the energy from our hair. The energy is present in the air inside the apparatus as well as outside, only in a *different concentration,* as is shown in the difference in the speed of discharge. The electroscope communicates with the air through the disk at the top and through holes in the casing. The energy with which it is charged from the sun radiation or our body is given off into the air in the process of discharge. We are justified in making the following assumption:

The energy with which the electroscope was charged will be discharged into the air *the more rapidly the lower the energy tension is in the air* relative to the charge of the electroscope. Conversely, the energy will be discharged the more slowly the higher the tension is in the surrounding air, that is, the smaller the difference between the energy charge of the electroscope and that of the surrounding air.

This assumption is in full accord with the general laws of energy: Water flows all the faster from a higher basin to the lower one the greater the difference in height between the two, and vice versa. The speed depends on the steepness of the drop, or, in other words, on the difference in energy of position. The metallic plate of the electroscope *discharges more quickly into air with a low energy tension than into air with a high tension.*[3]

This characteristic of our energy is new. It cannot be explained by the theory of ionization. Electrically highly charged air would cause the electroscope to discharge more rapidly. Therefore, *our energy cannot be electricity.* This inevitable conclusion is disturbing, for an energy which has electroscopic effects and yet is not electromagnetic energy sounds implausible.

[3] I am trying intentionally here to explain the difference in speed of discharge on the basis of the traditional theory of the potential difference. As will be shown in a different context, another, purely biophysical interpretation does better justice to the facts. (*Cf.* "Orgonotic Pulsation." *International Journal of Sex-economy and Orgone Research* 3, 1944, 97-150.)

We have to check another objection: The spontaneous discharge of the electroscope is slower within the apparatus because the air circulates more slowly in it than in the open air. Consequently, the exchange of the air ions takes place more slowly inside, and this is the reason for the slow discharge; therefore, the phenomenon is explained by the theory of ions, in other words, electricity.

This objection is easy to check. We measure the speed of discharge of the electroscope in the open air. Then we charge it again to the same mark and make the air around the electroscope circulate more rapidly with the aid of an electric fan. The experiment is then repeated in the room. We find that the fan does *not* influence the speed of discharge. The difference in speed of discharge, then, cannot be ascribed to the circulating air. The speed of discharge depends *only on the atmospheric orgone tension.* This tension is determined by the density, or concentration, of the orgone particles per cubic unit of air.

Our observations show the concentration of the energy in the apparatus to be higher than in the open air. The term *accumulator of atmospheric orgone energy* is therefore justified.

Theoretically, enclosed electroscopes should not lose their charge. The fact remains that even enclosed electroscopes show a spontaneous discharge. This is what the physicists call the "natural leak" and ascribe to the humidity of the air. *Thus what we measure is really the phenomenon called "natural leak."* We do not try to seal the air in the electroscope hermetically against the outer air; on the contrary, we let it intentionally communicate with the outer air. We determine just that phenomenon which the physicist, in measuring the effect of some electrical radiation, attempts to exclude, and which, to the extent to which he fails to exclude it, he subtracts from the effect. The spontaneous discharge of the electroscope which takes place "for no known reason" *is nothing but the normal effect of the atmospheric orgone.*

Another objection which might be raised is this: The inner metal walls screen the inside of the accumulator against the effect of radio-active substances; it is for this reason that the electroscope

discharges more slowly inside than outside. This objection is refuted as follows:

1. The phenomenon (slower discharge inside) as well as the temperature difference, is present everywhere, no matter where we place the apparatus. It is more than unlikely that "radio-active substances" are present *everywhere*.

2. If the phenomenon were due to radio-active substances on the outside of the apparatus, the discharge would be more rapid in a simple wooden box than if this wooden box is screened with metal plates on the *outside* against radio-activity. In reality, it is slower and not more rapid under these conditions. This refutes the objection and is a further proof of the correctness of our interpretation.

d) Quantitative determination of the orgone.

As we have seen, the orgone energy expresses itself in temperature differences and in differences of electroscopic discharge. These facts can be made the basis of *quantitative* orgone measurements. To begin with, we define the unit of orgone energy, *one Org:* This is the amount of orgone energy in a space of 1 cubic foot which corresponds to the maintenance of a temperature difference (To − T) of 1° C. for 1 hour, according to the formula

$$\text{Org} = (\text{To} - \text{T}) \cdot \text{t} \cdot \text{f}^3.$$

$$(\text{To} - \text{T} = 1^\circ\ \text{C.};\ \text{t} = 1\ \text{hour};\ \text{f}^3 = 1\ \text{cubic foot}).$$

The *amount* of orgone energy, i.e., the number of orgone energy particles in a unit space (Org), has to be distinguished from the *orgone tension* (Op). We shall call 1 Op that atmospheric orgone tension which in the time unit of 1 hour (T, 60 t′, 3600″) decreases the charge of an electroscope by the amount of one unit (Eo − Er = 1).

If one Op (Atm) designates the unit of the atmospheric orgone tension, Eo the charge of the electroscope, Er the remaining electroscope charge after reading, (Eo − Er) the amount of discharge, and t the time in hours, then

$$\text{Op} = \frac{\text{t}}{\text{Eo} - \text{Er}}$$

is the formula for the atmospheric orgone tension in the open air. The Op *within* the orgone accumulator we differentiate by appending the sign "accu." Op can also be directly expressed in hour-Org, minute-Org or second-Org, depending on whether a unit of charge is discharged in an hour, minute, second or multiples thereof:

1 hour Op	=	60 minute-Org	(60′0)
0.75 Op	=	45 minute-Org	(45′0)
0.5 Op	=	30 minute-Org	(30′0)
0.25 Op	=	15 minute-Org	(15′0)
0.16 Op	=	10 minute-Org	(10′0)
0.1 Op	=	6 minute-Org	(6′0)
0.05 Op	=	3 minute-Org	(3′0)
0.015 Op	=	1 minute-Org	(1′0)
0.00025 Op	=	1 second-Org	(1″0)

If, for example, one unit of electroscope charge is discharged in 30 minutes, then Op is:

$$\text{Op} = \frac{0.5\ (\text{t})}{1\ (\text{Eo} - \text{Er})} = 0.5, \text{ or, } \text{Op} = 30'\ \text{org.}$$

If, for example, the total charge of the electroscope Eo = 5 Org (the equivalent of 630 volts) is discharged in 20 minutes, Op is:

$$\text{Op} = \frac{0.33\ (\text{t})}{5 - 0\ (5\ \text{Eo} - \text{oEr})} = 0.066, \text{ or,}$$

$$\text{Op} = 4'\ \text{Org, that is, 4 minute-Org.}$$

Whether one prefers one or the other method of calculation is merely a matter of convenience.

The orgone charge of the electroscope can also be expressed in electrostatic units. An "electrostatic unit" equals about 300 volts. We charge an electroscope with energy from our hair so that the electroscope leaf is deflected 45° or 90°. We can produce the same effect by applying an electric current of high voltage to the electroscope. *One unit of orgone charge then corresponds to that voltage which is necessary to produce the same deflection of the electroscope leaf.* We find in this way that by stroking our hair softly only *once* we can take off energy amounts of hundreds of volts.

The instrument which was used in these measurements is a static electroscope with aluminum leaf. The volt calibration in the laboratory of the Radio Corporation of America showed the following values:

Scale Divisions	Volts	
1	135	approximately 45 volts per scale division
2	180	
3	225	
4	270	
5	330	approximately 60 volts per scale division
6	390	
7	450	
8	*510*	Difference: 120 volts
9	570	
10	*630*	approximately 100 volts per scale division
11	730	
11½	780	

In our experiments, we always charged the electroscope from our hair up to the *tenth* scale division, that is, with an amount of energy equivalent to about 630 volts. We then let it discharge to the air two scale divisions, that is, the orgone equivalent of about 120 volts. *Two scale divisions (9 to 10) correspond to 1 orgone charge unit, that is, the equivalent of 120 volts.* If the electroscope, after being charged to the tenth scale division, that is, with an orgone energy equivalent of 630 volts, discharges within 1 hour (60 minutes) 1 Org (= 120 volts), the orgone tension (Op) of the surrounding air is 1 hour-Op or *60 minute-Op.* In other words, the electroscope discharged into the air 2 volts per minute.

We determined *1 Org* by the constant *temperature difference* (To — T) in an accumulator of 1 cubic foot in the course of 1 hour. In the *electroscopic* measurement we determine 1 Org as the equivalent of 120 volts. We do not know yet whether these two different determinations of the unit 1 Org are equivalent. The parallel course of the curve representing To — T and that representing the atmospheric orgone tension (Op Atm) seems to indicate that this is so. A definite answer to the question will require further research.

I would like to present the results of a few measurements which show interesting facts about the orgone tension in the atmosphere and about the relationship between the atmospheric tension and the tension in the accumulator. Many details here still require intensive work over a long period of time, but the essential points are clear. Fig. 11, p. 116, shows four superimposed orgone tension curves. "Op Atm" is the curve of the daily variations in atmospheric orgone tension, always measured at noon. "Op Room" describes the daily variations of the orgone tension in the room in which the orgone accumulator was kept at the time of these measurements. The third curve, "Op Accu," represents the variations in orgone tension within the accumulator, measured between 12 and 1 P.M. The fourth curve (broken line) is the curve of the temperature difference (To — T) at the orgone accumulator, measured daily between 12 and 1 P.M., from November 29, 1940 to December 22, 1940, in an accumulator of 1 cubic foot, and beginning December 24, 1940, in an accumulator of 25 cubic feet (2′x2.5′x5′) built for therapeutic experiments with humans. (For reasons of space, only a section, covering 9 days, is reproduced in fig. 12, pages 118 and 119.)

The curves show the following:

1. The tension curve of the room (Op Room) is, expressed in minute-Org, higher than that of the atmosphere; that of the accumulator (Op Accu) is higher than that of the room and that of the atmosphere (Op Atm). That is, *the energy concentration is highest in the accumulator.*

2. The curve of the temperature difference (To — T) runs *more or less parallel* to the tension curve of the atmospheric orgone (Op Atm).

3. The increase of tension in room and accumulator occurs *roughly one day after* the increase in atmospheric tension.

4. The atmospheric tension is *low on days with rain and snow, and high on days with sun.* The atmospheric tension varies between about 0 and 1. One or two days before rain or snowfall the atmospheric tension curve drops more or less sharply; the tem-

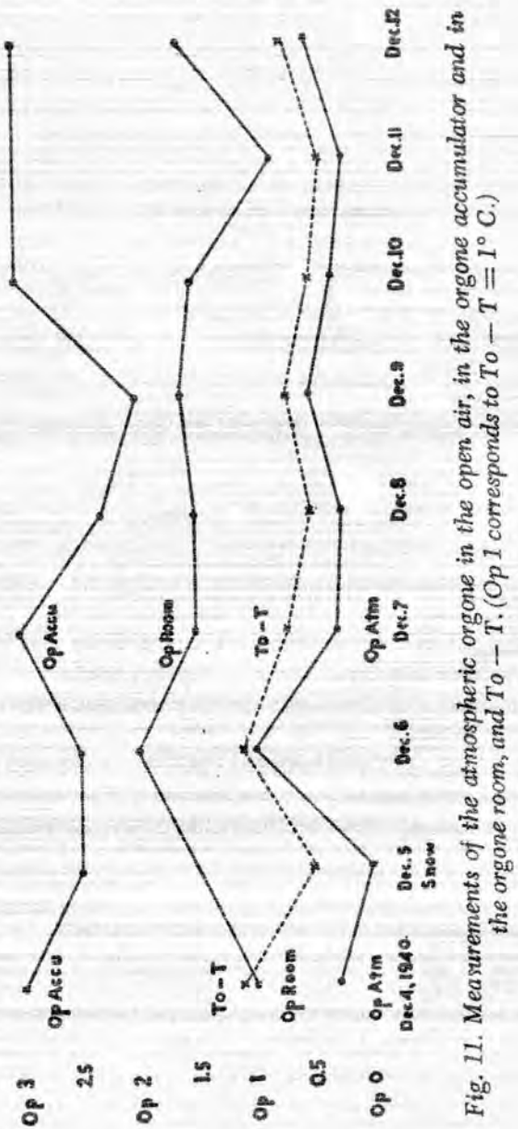


Fig. 11. Measurements of the atmospheric orgone in the open air, in the orgone accumulator and in the orgone room, and To — T. (Op 1 corresponds to To — T = 1° C.)

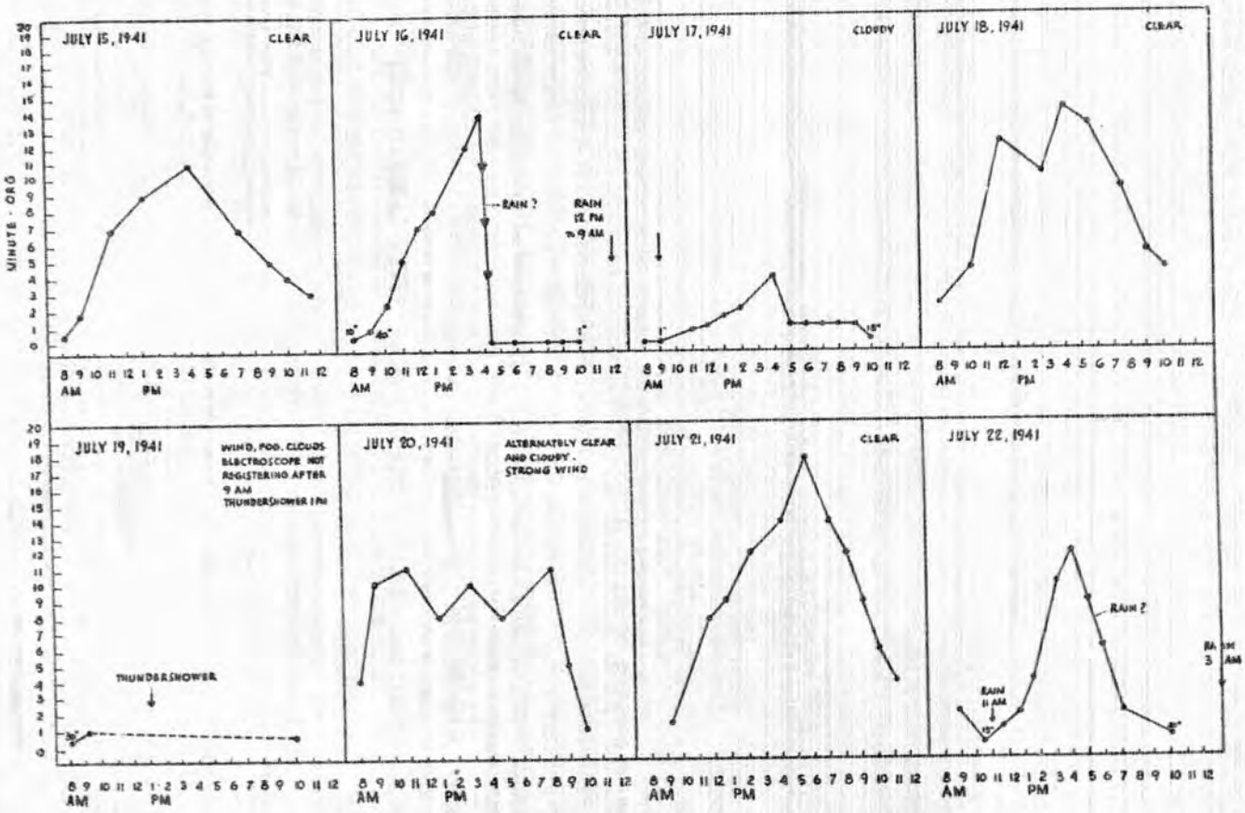
perature difference curve also drops before or at the time of rain.

In other words, there is a *connection between atmospheric orgone concentration and weather formation.* Because we use the orgone accumulator for therapeutic purposes, the knowledge of this connection is important.

Here, we have to consider an important objection which might be raised on examination of these curves. The objection is this: In order to explain the drop in the curve, indicating a more rapid discharge before rainfall, we do not have to assume a special orgone energy. This phenomenon can be explained by the theory of the "electricity in the air." Previous to rain or a thunderstorm, the air is more highly ionized and that is what causes the more rapid discharge of the electroscope. I had this doubt myself, but there was the fact of the *slower* discharge of the electroscope within the accumulator.

This objection was completely refuted by the measurements taken in July and August, 1941, in my laboratory at Bald Mountain, Maine. I measured not only the daily variations at noon, but the variations of atmospheric energy tension from 8 A.M. to about 12 midnight every hour, in all kinds of weather. These measurements showed unequivocally that the discharges of the electroscope are based *not on variations in "air electricity" but on variations of the atmospheric orgone tension.*

Fig. 12, p. 118f., shows the daily variations of the atmospheric orgone tension between July 15 and 25, 1941. The discharge of the electroscope is far more rapid in the early morning than between noon and 4 P.M. It is slowest around noon. This results, of course, from the intense sun radiation, in other words—quite in accord with our other observations—*from a higher concentration of orgone energy.* It would be nonsensical to assume that in the early morning or late afternoon the atmospheric air is more strongly "ionized" than at noon, when the sun shines intensely. If the discharge were due to the electricity in the air, it would be *slower* in the early morning and late afternoon than at noon; but it is, on the contrary, more rapid. The highest concentration in the atmospheric energy is found around 4 P.M. On entirely cloudless days, the curve ascends and descends in a quite regular man-



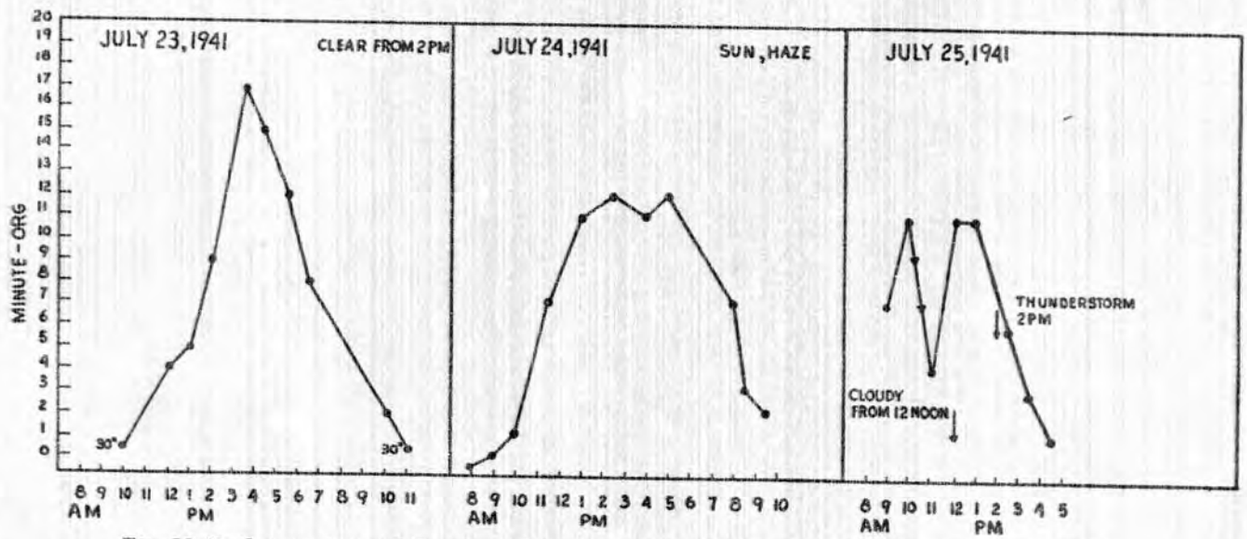


Fig. 12. Daily variations of the atmospheric orgone tension between July 15 and July 25, 1941.

ner. On days, however, when sunshine alternates with cloudy weather, the curve shows an irregular up and down (*cf.*, for example, the curve for July 20th). We find, furthermore, that *about 3 to 10 hours before a rainfall or thundershower, there is a rapid drop in the concentration of the atmospheric orgone energy.* The electroscope discharges very rapidly (less so in the accumulator than in the open air), and the temperature difference To — T becomes very small or disappears altogether. If the electroscopic discharge is measured regularly over a long period of time, one finds that the curve is roughly parallel to that of the temperature difference.

An inspection of the curves will show the following: On July 25, there was a shower at 2 P.M.; between 10 and 11 A.M. the tension had dropped from 12′ Org to 5′ Org. On July 16, between 4 P.M. and 4:30 P.M., that is, *within 30 minutes*, the tension dropped suddenly from 14 minute-Org to 10 second-Org. Around midnight, a heavy rainfall set in.

Similarly, on July 22, the tension dropped, between 4 and 7 P.M., from 12′ Org to 2′ Org; by 10 P.M. it was only 30″ Org. At 3 A.M. on July 23 a heavy, steady rain set in. On July 19, a windy and very cloudy day, the tension did not go above 1 minute-Org. At 10 A.M. the electroscope could no longer be charged, and at 1 P.M. a heavy thundershower set in which lasted until 3 P.M.

Conversely, days with a regular tension curve and relatively high orgone concentration in the evening (1 to 3 minute-Org) are regularly followed by a clear day. These daily variations are, of course, highly important for the therapeutic application of the orgone. If we want to give the patient a certain dosage of hour-Op or minute-Org, the exposure time will have to be different, depending on whether it is early morning, noon or evening. This will be necessary as long as we cannot regulate the orgone tension in the accumulator independently of the weather.

Control measurements which have been constantly taken since the summer of 1941, again and again confirmed the fundamental finding: variations of the tension depending on the time of day, its drop previous to and during rain or snow, and the reactions

at the electroscope which refute the explanation by ionization of the air.

The reader trained in physics will ask: *What is the connection between orgone and so-called static electricity?* This question has been discussed elsewhere.[4]

5. DEMONSTRATION OF ORGONOTIC PULSATION IN THE REALM OF THE NON-LIVING

The following observations and experiments were undertaken in order to demonstrate the specifically biological orgone energy also in the *purely physical* realm. This undertaking was successful which takes the ground from under any mystical concept of the specific biological energy. The relevant observations and experiments are very simple and easily carried out.

a) The oscillations of a pendulum in the pulsating orgone energy field of a metal sphere.

Experiment: A metal sphere (iron or steel) of about 4 to 6 cm. diameter is placed on a solid table, with or without concrete floor. At a distance of about 0.5 cm. from the equator of this sphere, a much smaller sphere (about 1 cm. diameter) is suspended freely as a pendulum. For certain definite reasons, the length of the pendulum thread is made 16 cm. The best results, according to my experience, are obtained if one makes the pendulum sphere of a mixture of earth and iron filings (i.e., organic plus metallic material) by mixing the two substances in water and putting them into a sphere of extremely thin glass. The whole apparatus is then covered with a transparent cellulose cover which protects it against air currents.

Observation: In dry, sunny weather, the pendulum sphere oscillates spontaneously toward the center of the metal sphere. When the relative humidity exceeds about 70%, or in rainy weather, the pendulum movements decrease or disappear altogether. The movements increase in amplitude if the organism of the observer has a strong and wide orgone energy field. The oscillations con-

[4] *Cf.* "Orgonotic Pulsation," *International Journal of Sex-economy and Orgone Research* 3, 1944, 97-150.

tinue all the time, no matter where the apparatus is placed. They vary only according to the laws of the pendulum, the number of oscillations per unit of time varying with the length of the pendulum and with the altitude.

Conclusion: This experiment demonstrates the *existence of a*

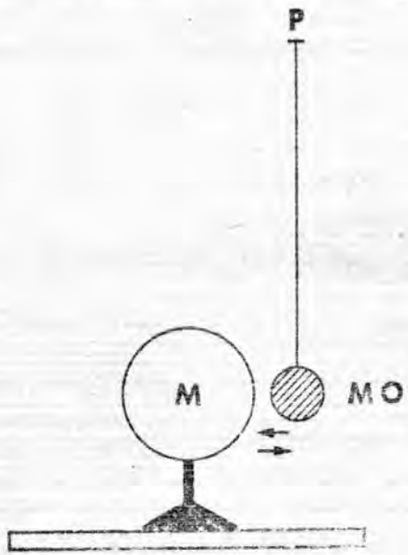


Fig. 13. Demonstration of orgonotic pulsation in the atmosphere.

M = metal sphere
P = pendulum
MO = metal + organic matter
⇆ = direction of oscillation

pulsating orgone energy field around an ordinary iron sphere which makes a freely suspended pendulum oscillate. *The natural orgone energy field in the realm of the non-living pulsates.*

b) The pulsation of the atmospheric orgone.

Experiment and observation: A telescope (E. Vion, Paris, France) with an aperture of 3¼ inches and 4 foot length, with a magnification of 185x, was placed on the shore of the lake so that

the opposite shore, at a distance of from 4 to 8 miles, could be observed. The observations were made at my cabin on Lake Mooselookmeguntic, Maine, during 2 months in the summer of 1944 and 4 weeks during the summer of 1945, daily from morning until evening, at about half-hourly intervals. The important observation is the following: With the telescope trained toward the South, one observes against the background of the opposite shore, even at a magnification of 60x, a wave-like pulsating movement which—save certain exceptions—is always *from West to East.* This West-East movement is *constant* no matter whether the lake is smooth or rough, no matter whether the wind is from the West or from the South, no matter whether it is strong or weak. The farther toward the West or the East one trains the telescope, the less observable does the movement become, to disappear completely if one looks directly toward the West or the East. The speed of the wave-like movement varies at different times. It is independent of the air temperature. The "something" in the atmosphere must, of course, be moving faster than the earth, or else the movement could not be seen. Always before the formation of a heavy thunderstorm in the *West,* the direction of the wave-like movement became reversed, or at least ceased. I have never seen it move from South to North or from North to South.

This telescopic observation is supported by an observation one can make with the naked eye at times of complete calm and smooth lake: Above the mirror of the lake, one sees a *pulsation* of an infinite number of small sections, while "the whole" moves, in a *pulsatory* manner, and more or less rapidly, from West to East.

These observations, which—with some patience and practice—are very easy to make, are in accordance with the finding of a pulsating orgone energy field around a metal sphere as well as with the orgone-biophysical basic concept of *the pulsatory basic function of the orgone energy.* More than that, the rotation and pulsation of the atmospheric orgone from West to East is in absolute agreement with certain astronomic observations known for a long time. The astronomic significance of these observations will be discussed extensively elsewhere. The preliminary conclusion is the following: *The earth is surrounded not only by an air*

atmosphere of a definite chemical composition, but also by an envelope consisting of orgone energy. This ORGONE ENVELOPE rotates from West to East, faster than the earth. The connection between the reversal of this direction and local weather formation awaits further study in detail. The rotating orgone envelope has nothing to do with waves of vapor or with air movement, for it is independent of these processes.

What has been said here is to be regarded as a preliminary communication. When social and financial conditions permit, these findings will have to be checked and expanded by intensive studies in various places. I may add here, however, that it has already been possible to confirm the existence of a pulsation in the atmosphere by way of the oscillograph. The presentation of these findings will have to be postponed for some time.

6. DEMONSTRATION OF ORGONOTIC LUMINATION AT THE ORGONE ENERGY FIELD METER

Apparatus: The different pole of the secondary coil of an induction apparatus (an old diathermy apparatus will do) is connected by an electric wire with an iron plate of 1 x 2 feet which rests on a wood plate the same size (*cf.* diagram, p. 125). About 6 to 12 inches above this plate, another metal plate of the same size is mounted in such a manner that it can be moved up and down. The upper side of this plate is insulated with a plate of plastic material (or celotex) of about ½ inch thickness. The lower and the upper iron plate are connected by a wire connected with a simple cylindrical bulb of about 40 watts. The primary current of the induction apparatus is turned up just to the point where the bulb begins to glow. (How this is to be achieved depends, of course, on the individual induction apparatus.)

Observations: 1. If one holds a fluorescent tube in one's hand and brings it close to the upper plate, the tube luminates, at a distance from the plate depending on the strength of the primary current. If we put the tube on the upper plate and remove our hand, the light goes out. As soon as we bring our hand close to the tube, the lumination reappears and becomes more intense when we touch the tube. The lumination is most intense *between* the

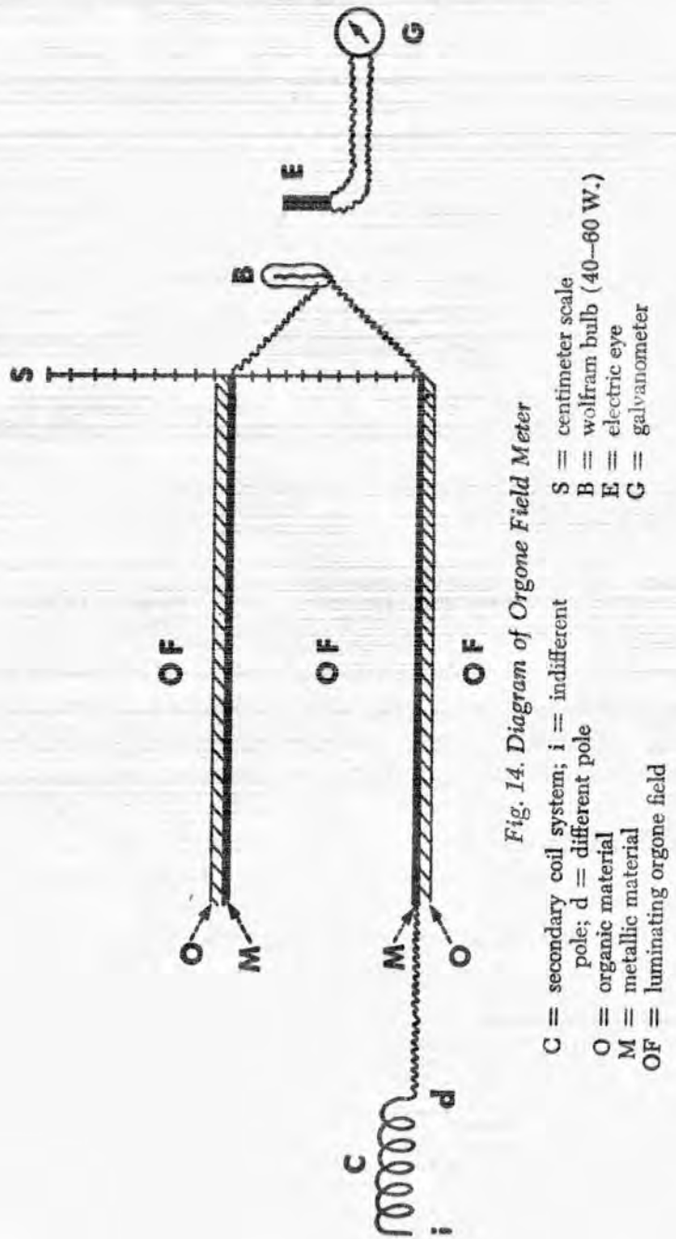


Fig. 14. Diagram of Orgone Field Meter

C = secondary coil system; i = indifferent pole; d = different pole
O = organic material
M = metallic material
OF = luminating orgone field
S = centimeter scale
B = wolfram bulb (40–60 W.)
E = electric eye
G = galvanometer

two metal plates and decreases steadily with the distance from the apparatus. It is intermittent, not steady. In this manner, we can determine the exact extent of the energy field of the orgone energy field meter.

2. If we bring our hands gradually closer to the upper plate from above, the connected bulb (B) luminates more strongly, and even more strongly when we put our hands on the plate (to avoid an electric shock, there must be no nails or other metallic connections with the metal plate). The more of our body surface we bring close to the upper plate, the stronger is the lumination. With careful adjustment of the primary current, it is possible to perceive the pulsation of the heart in the form of slight oscillations of the lumination.

3. A static electroscope gives no deflection if we bring our hand close to its plate. If, however, we place the electroscope into the energy field of the apparatus, on the upper plate, then we find a deflection if we bring our palm close to the electroscope plate (without, of course, touching it).

4. A freshly cut branch with many leaves, or a freshly killed fish produce lumination of the bulb if put on the upper plate. However, the lumination becomes steadily weaker and cannot be achieved at all after the fish has been dead for some time.

5. If we bring a dry piece of wood, which is long enough so that our own orgone energy field does not come into contact with the energy field of the apparatus, close to the upper plate, there is no lumination. If, however, we bring a metal plate close, parallel to the upper plate, there is lumination of the bulb.

6. In the field of an Xray machine of 60 to 80 kilovolt, we cannot produce lumination of a fluorescent tube.

Conclusions:

1. The secondary coil of an induction apparatus—in contradistinction to ordinary electric high voltage—produces an orgone energy field which can be demonstrated by the lumination of a fluorescent gas (helium, argon, neon) without the necessity of direct contact by a wire.

2. *Orgonotic lumination is the result of the contact between two orgone energy fields.*

3. The lumination effect is obtained only through the contact of an orgone energy field with the energy field of a *living* organism, but not through contact with non-living organic material. That is, the living organism differs from the non-living organism in that it possesses an orgone energy field.

4. The addition of a sensitive electric eye (E) near the bulb transforms the lumination energy into electrical energy and makes it possible to measure it in electrical units by means of a galvanometer (G). In this manner, the orgone field meter can be used to determine the intensity and the extent of the orgone energy field of a living organism.

7. A MOTOR FORCE IN ORGONE ENERGY

During the summer of 1947, I succeeded in establishing the following facts:

1. A high concentration of orgone energy in the atmosphere—resulting from the presence of orgone accumulators or, better, a special orgone room—can be demonstrated by means of Geiger-Müller counters, the rate of action varying from 40 to 80 impulses per minute at a threshold voltage of from 700 to 800 volts.

2. Countertubes which have been kept in a highly concentrated orgone atmosphere for several weeks, thus soaking up orgone, are capable of producing a rate of from 25 to over 100 impulses *per second* in the impulse counter, at a "rotation threshold" of 900 to 1,000 volts. This rate of impulses amounts to an even rotation of the pointer in the impulse counter. That is,

3. *Orgone energy is capable of developing a motor force.*

The relevant facts will be published in detail in the *Annals of the Orgone Institute* as soon as the necessary control experiments are completed. The existence of a motor force in orgone energy seems self-evident considering the fact that the locomotion of living bodies can be due to *nothing but* an orgonotic motor force.

Chapter V

THE CARCINOMATOUS SHRINKING BIOPATHY

1. DEFINITION OF THE BIOPATHIES

The cancer tumor is no more than a symptom of the cancer disease. Therefore, local treatment of the tumor—be it operation or irradiation with radium or Xray—affects not the cancer disease as such, but only one of its visible symptoms. Similarly, death from cancer is not due to the presence of one or more tumors. Rather, it is the ultimate expression of the systemic biological disease "cancer" which is based on a disintegrative process in the total organism. Medical literature contains no data concerning the nature of this systemic biological disease. "Cancer disposition" means nothing but the fact that back of the cancer tumor there are at work hitherto unknown processes of a fatal nature. Cancer cachexia, the typical final phase of cancer, must be considered nothing but the ultimate visible phase of this general, as yet unknown process called "cancer."

The term "cancer disposition" is misleading and meaningless. The term *cancer biopathy,* on the other hand, has a definite meaning. The ensuing chapters will demonstrate the process which is the basis of cancer biopathy.

Under the term *biopathies* we subsume all those disease processes which take place in the autonomic life apparatus or, simply, in the plasmatic system. There is a typical basic disturbance of the plasmatic system which—once it has started—may express itself in a variety of symptomatic disease pictures. This basic disturbance, the biopathy, may result in a cancer (cancer biopathy) but equally well in an angina pectoris, an asthma, a cardiovascular hypertension, an epilepsy, a catatonic or paranoid schizophrenia, an anxiety neurosis, a multiple sclerosis, a chorea, chronic alcoholism, etc. What determines the development of a biopathy into

this or that syndrome, we do not as yet know. What interests us here primarily is that which all of these diseases have *in common: a disturbance of the biological function of plasmatic pulsation in the total organism.*

A fracture, an abscess, a pneumonia, yellow fever, rheumatic pericarditis, acute alcohol intoxication, infectious peritonitis, syphilis, etc., are *not* biopathies.[1] They are not due to a disturbance of the autonomic pulsation of the total vital apparatus; they are circumscribed, and, if they result in a disturbance of the biological pulsation, they do so only secondarily. We shall speak of biopathies only where the disease process *begins* with a disturbance of the biological pulsation, no matter what secondary disease picture it results in. Thus, we can distinguish a "schizophrenic biopathy" from a "cardiovascular biopathy," etc.

This addition to medical terminology is justified by the fact that we cannot comprehend any of the diverse diseases of the autonomic life apparatus unless,

1) we distinguish them from the typical infectious diseases and traumatic surgical diseases;

2) we look for and find their common mechanism, the disturbance of biological pulsation;

3) we learn to understand their differentiation into the various disease pictures.

The cancer disease lends itself particularly well to a study of the basic mechanisms of biopathy. In it, we find a great number of disturbances that everyday medical practice has to deal with. It shows pathological cell growth; one of its essential manifestations is bacterial intoxication and putrefaction; it is based on chemical as well as bio-electric disturbances in the organism; it has to do with emotional and sexual disturbances; it results in a number of secondary processes—such as anemia—which otherwise

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[1] Recent orgone-biophysical research results, however, have forced me to reconsider the exclusion of pneumonia and some heart diseases from the realm of the biopathies. The material is not fully conclusive yet. Further investigation will have to prove or disprove my present (1946) assumption that the *disposition* to pneumonia and valvular heart diseases, especially those on the basis of "rheumatic fever" may be set by chronic extension of the bony chest structure due to the typical inspiratory fixation of the chest.

form disease entities by themselves; it is a disease in which civilized living plays a decisive role; it is of concern to the endocrinologist or virus researcher.

The confusing variety of manifestations presented by the cancer disease only hides a common *basic disturbance*. The same is true, as we know, of the neuroses and functional psychoses which—in all their variety of form—have one common denominator: *sexual stasis*.

Sexual stasis represents a fundamental disturbance of biological pulsation. Sexual excitation, as we know, is a primal function of the living plasma system. *The sexual function has been shown to be the productive life function* per se. Thus, a *chronic* disturbance of the sexual function must of necessity be synonymous with a biopathy.

The stasis of biosexual excitation may manifest itself, basically, in two ways. It may appear as an emotional disturbance of the psychic apparatus, that is, as a neurosis or psychosis. But it also may manifest itself *directly* in a malfunctioning of the organs and express itself as organic disease. As far as we know, it cannot produce actual infectious disease.

The central mechanism of biopathy is a disturbance in the discharge of biosexual excitation. This statement calls for the most detailed substantiation. It is not surprising to find that in the biopathy physical and chemical factors are at work as well as emotional factors. The biosexual emotion demonstrates the psychosomatic unity of the total biological system more forcibly than anything else. Thus it is to be expected that disturbances in the discharge of biosexual energy—no matter what their point of manifestation—will result in disturbances of biological functioning, in other words, in a biopathy.

2. BIOPATHIC SHRINKING

Living functioning in man is basically no different from that in the ameba.[2] Its basic criterion is *biological pulsation*, that is, alternating complete *contraction* and *expansion*. In unicellular organisms, it is readily observed in the form of the rhythmical contraction of the vacuoles or the contractions and serpentine movements of the plasma. In the metazoa it is most readily seen in the cardiovascular system; the pulse beat represents the pulsation unequivocally. In the various organs, it takes a different form, according to their structure. In the intestines, it shows itself as a wave of alternating contraction and expansion, as "peristalsis." In the urinary bladder, the biological pulsation functions in response to the mechanical stimulus exerted by the filling of the bladder with urine. It functions in the striped muscles as contraction, in the smooth muscles as a wave-like peristalsis. In the orgasm, the pulsation takes hold of the total organism in the form of the orgasm reflex.

[2] *Cf.* W. Reich, "Der Urgegensatz des vegetativen Lebens," 1934.

Neither the pulsatory movements of the organs nor their disturbances such as shock, blocking, shrinking, etc., are compatible with the generally accepted notion that the nerves only transmit impulses while they themselves are rigid and immobile. *The autonomic movements are comprehensible only under the assumption that the autonomic nervous system itself is mobile*. The decisive question as to whether this is a fact can be answered by direct observation. We put small, sufficiently transparent worms under the microscope in such a manner that not only the ganglion but the ganglia *fibers* are in focus. As the worm is in constant motion, one has to learn to keep an autonomic fiber constantly in focus. Thus one can convince oneself that *the autonomic system does indeed expand and contract* and is not rigid. The movements of the nerves are serpentine, slow, wave-like, sometimes jerky. They always precede the corresponding movements of the total organism by a fraction of a second: first, the nerve, and its ramifications, contracts, and then the contraction of the musculature follows. The same is true of the expansion. As the worm dies, the nervous system gradually shrinks; with that, the organism bends. The process of gradual shrinking is occasionally interrupted by a contraction. After a shorter or longer period of complete immobility, the rigid contraction ("rigor mortis") subsides, the organism relaxes together with the nerves, and motion does not reappear.

Biopathic shrinking begins with a chronic preponderance of

contraction and inhibition of expansion in the plasmatic system. This is most clearly manifested in the respiratory disturbance of neurotics and psychotics: the pulsation (alternating expansion and contraction) of lungs and thorax is restricted; the inspiratory attitude predominates. Understandably enough, the general contraction ("sympatheticotonia") does not remain restricted to individual organs. It extends to whole organ systems, their tissues, the blood system, the endocrine system as well as the character structure. Depending on the region, it expresses itself in different ways: in the cardiovascular system as high blood pressure and tachycardia, in the blood system as shrinking of the erythrocytes (formation of T-bodies, poikilocytosis, anemia), in the emotional realm as rigidity and character armoring, in the intestines as constipation, in the skin as pallor, in the sexual function as orgastic impotence, etc.

At this point, the careful reader will raise an objection. He will ask how one can speak of "shrinking" if it is only a matter of a chronic contraction of the autonomic apparatus. Is there not the possibility that the contraction will subside and that the function of complete pulsation will be restored? Should one not make a distinction between "chronic contraction" of the autonomic system, on the one hand, and its "shrinking" on the other? Could not the shrinking be a *result* of the chronic contraction, a gradual and premature dying off of the vital apparatus?

The objection is correct. *The biopathic shrinking in cancer is, in fact, the result of a chronic contraction of the autonomic apparatus.*

3. SEX-ECONOMIC CONSIDERATIONS

The connecting link between sexual function and cancer disease is formed by the following facts with which sex-economic clinical experience has made us familiar:

1. Poor external respiration which in turn leads to a disturbance of the internal respiration in the tissues.
2. The disturbed function of orgonotic charge and discharge of the autonomic organs, particularly the sexual organs.
3. The chronic spasms of the musculature.
4. Chronic orgastic impotence.

Up to now, the connection between disturbances in the discharge of sexual energy and cancer has not been investigated. Experienced gynecologists are well aware of the fact that such a connection exists. Respiratory disturbances and muscular spasms are the immediate result of a fear of sexual excitation (orgastic impotence). Organs with poor respiration, organs which are spastic and insufficiently charged, are biologically weakened; thus, they are highly susceptible to cancer-producing stimuli, whatever they may be. On the other hand, organs which function biologically normally are not affected by these same stimuli. This is a necessary and logical assumption.

These clinically well-established facts—deficient biological charge, muscular spasm and deficient external and internal respiration—give the concept of "cancer disposition" a tangible content. I shall now attempt to show how sex-economic clinical experience led to cancer research.

Sex-economic observation of character neuroses showed again and again the significance of *muscular spasms* and the resulting devitalization in the organism. Muscular spasm and deficiency in orgonotic charge are subjectively experienced as "being dead." Muscular hypertension due to sexual stasis regularly leads to a diminution of orgonotic sensations; the extreme degree of this is the sensation of the organ "being dead." This corresponds to a block of biological activity in the respective organ. For example, the blocking of biosexual excitation in the genital goes with spastic tension of the pelvic musculature, as is regularly seen in the uterine spasms of frigid women. Such spasms often result in menstrual disturbances, menstrual pains, polyps and fibromata. The spasm of the uterus has no other function than that of preventing the biosexual energy from making itself felt as vaginal sensation. Spasms representing inhibitions of vegetative currents are seen particularly frequently wherever we find *annular* musculature, for example, at the throat, at the entrance to and the exit from the stomach, at the anus, etc. These are also places where cancer is found with particular frequency. The disturbance in biological charge of a gland, a region of the skin or a mucous membrane is produced and maintained by a muscular spasm in

the neighborhood of the affected site; the spasm prevents biological energy from charging the respective site.

In a woman whom I treated orgone-therapeutically, Xray showed a beginning cancer of the 4th costal cartilage on the right side. This was due to a chronic spastic contraction of the right pectoralis muscle. This contraction represented a strong holding back in the shoulders because of repressed beating impulses. The woman had never experienced an orgasm and suffered from compulsive flirting.

In orgone therapy, we see not only character neuroses, but also, of course, schizophrenic, epileptic, Parkinson-like, rheumatic and cancerous disturbances. If an organic disease develops, this may take place during the course of the treatment or afterward; in the latter case, one will remember the signs that foreshadowed the disease. The most frequent finding is *spasms in the pelvic musculature in women*, resulting, in the majority of cases, in benign tumors of the genital organs.

Clinical observations raise the question as to the fate of the somatic sexual excitation when its normal discharge is barred. We know only that the biosexual excitation can be reduced or inhibited by chronic muscular tensions. In female patients, these tensions often show in the form of hard lumps in the uterus. The spasm of the uterus usually spreads to the anal sphincter and the vagina, and beyond that, to the adductors of the thigh. The pelvis is always retracted, the sacral spine often stiff and ankylotic. Lumbago and pathological lordosis are typical manifestations of this condition. In the pelvis, any vegetative sensation is absent. During expiration, the wave of excitation is inhibited by the pulled-up chest and the tense abdomen. The excitation of the large abdominal ganglia does not progress to the genital organs and thus a disturbance of biological functioning necessarily results. The genitals are no longer capable of biological excitation.

Many women who suffer from genital tension and vaginal anesthesia complain of a feeling that "something is not as it should be down there." They relate that during puberty they experienced the well-known signs of biosexual excitation; and that later they learned to fight these sensations by way of holding their breath.

Later, so they relate in a typical manner, they began to experience in the genitals a sensation of "deadness" or "numbness," which, in turn, frightened them. As the vegetative sensations in the organs are an immediate expression of the actual biological state of the organs, such statements are of extreme importance for an evaluation of somatic processes. (The fact has to be kept in mind that patients are rarely able to comprehend or describe their organ sensations spontaneously; it takes character-analytic exploration to make them able to do so.)

The generally prevailing sexual inhibition of women explains the prevalence of cancer in the breast and the genital organs. The sexual inhibition may have existed for decades before it manifests itself as cancer.

The following case illustrates in a singularly simple manner the immediate connection between character armoring, muscular spasm and the onset of a cancer tumor.

A man of 45 came to my laboratory because of a complete obstruction of the esophagus by a cancer tumor. He was unable to take solid food at all; liquid food he soon vomited. Xrays showed a shadow the size of a small fist and a complete obstruction in the middle of the esophagus. The patient was rapidly losing weight and strength; there was a severe anemia and T-bacilli intoxication. The anamnesis revealed the following facts: Several months previous to the onset of the complaints, his son had been drafted for the army. This son was the patient's favorite; he became worried and deeply depressed. (He had always had a tendency to depression.) In the course of a few days, he developed a spasm of the esophagus. He had difficulty in swallowing; this disappeared, however, when he took a drink of water. At the same time, he had a sensation of oppression in the chest. These disturbances kept coming and going for some time, until finally they became stationary. The difficulty in swallowing increased rapidly. He went to see a physician who found the constriction and a small tumor. Treatment by Xray did not help, and in the course of a few months the man got to the point of starving to death. I should like to add that he had suffered since childhood from a severe spasm of his jaw musculature; his face had a hard,

rigid expression. Correspondingly, his speech was inhibited; as a result of the tension in his jaw muscles, he talked through his teeth.

The extent of the devastating results of the inhibition of the natural biological rhythm—as it is expressed in respiration and the alternation of sexual tension and gratification—can as yet not even be guessed at. Deficient external respiration must of necessity lead to a deficient internal respiration of the organs, that is, a deficient supply of oxygen and elimination of carbon dioxide.

When, some years back, I began to comprehend the significance of the respiratory disturbance for emotional disturbances, I remembered the findings of Otto Warburg[3] concerning the metabolism in cancer tissue. Warburg found that all the various cancer-producing stimuli have one thing in common: they produce a local oxygen deficiency as a result of which there is a disturbance of respiration in the respective cells. Thus, the cancer cell is a poorly breathing cell. Warburg considers this oxygen lack in the cells one of the causes of cancer, in the following manner. In certain places, only such cells will develop as are capable of overcoming the respiratory disturbance. The cancer cells originate from such cells. It is a matter of a disturbance in the energy metabolism. The respiratory disturbance is characteristic of all known malignant tumors, including the Rous' sarcoma. *The metabolism of cancer cells, thus, has to be regarded as an anoxic condition of normally growing cells.* From this correct finding of Warburg we cannot, however, draw the conclusion that the cancer cell is nothing but a normal cell taking on a different mode of growth under the influence of oxygen lack. In reality, the cancer cell is—biologically speaking—basically different from the normal cell. It is nothing but a protozoal formation. (This will be shown in detail in Chapter VI.)

As stated before, these facts form the connecting link between the autonomic functions and the disease of cancer.

4. FROM THE CASE HISTORY OF A CANCER PATIENT. FIRST ATTEMPT AT ORGONE THERAPY

I shall now give the history of a cancer patient which lends

[3] *Cf.*, e.g., *Biochemische Zeitschr.*, Bd. 317.

itself particularly well to a demonstration of the nature of the shrinking biopathy.

The patient's brother related that her first complaint was a violent pain in the right hip bone. The pain was constant and "pulling." At this time, her weight was about 125 lbs. Her physician diagnosed a sacro-iliac spasm. She was incapable of rising from the examination table. She was given injections of morphine and atropine, to no avail. The pain continued unabated and the patient was unable to leave her bed, where she lay flat and immobile. Three months after the onset, the patient began to vomit. At about the same time, the pain moved to the region of the fifth cervical vertebra. Xrays showed a collapsed vertebra. An orthopedic surgeon put the patient in a plaster cast. He was the first to find a collapse of the 10th dorsal vertebra, a metastasis from a cancer of the left breast. A biopsy confirmed the diagnosis of cancer. The patient was given Xray treatment of the pelvis and the spine and was sterilized by Xray. She was constantly in bed. When she left the hospital after the Xray treatment, the patient weighed 90 lbs.

The hospital case history showed the following data: Four months before admission, there were pains in the *right hip* which increased with walking and which made it difficult for the patient to sit down. The following is striking: *the pains which kept the patient in bed for over two years did not set in originally at the place where the tumor was diagnosed. The pains were in the right hip; the primary tumor, however, was in the left breast, and several metastases were in the spine.*

The patient also suffered from vomiting. The record states that she would lie flat in bed and was unable to move on account of her pains. She had no enlarged lymph glands. The tumor of the breast measured about 3 x 2 x 6 cm. Her legs showed limited motility, the sacrum was dislocated and stiff. Most of the spine was painful. The hospital diagnosis was: Carcinoma of the left breast with bone metastases. Four months after the onset of the pains, the hospital physician pronounced the case hopeless.

Twenty-six months after the discovery of the breast tumor, the patient was brought to my laboratory, hardly able to walk, being supported by two relatives. The color of her skin, particularly of

the face, was ashen gray. The pain in the back, sharply localized at the 12th dorsal vertebra, was violent. The left breast showed a tumor the size of a small apple, hardly movable. Blood examination: Hemoglobin 35%; T-bacilli culture in bouillon strongly positive after 24 hours. There were rot bacteria; the erythrocytes were largely in bionous disintegration and showed T-bodies; there were small nucleated round cells and numerous T-bacilli. The autoclavation test gave predominantly blue bions, but the vesicles were small and showed very little radiation. Inoculation of the bouillon culture on agar resulted in clear-cut T-bacilli growth. These blood findings pointed to an extreme biological debility of the blood system. Xrays showed the following:

The fifth cervical vertebra is collapsed. No significant findings at the other cervical vertebrae.

The dorsal spine shows collapse of the tenth and twelfth vertebra and a narrowing of the joint space between the third and the fourth vertebra. There is also strong suggestion of a metastatic lesion at the medial third of the right ninth rib.

No lesions are present at the lumbar spine, but there are three round areas of lesser density at the right ilium near the sacro-iliac joint which are very suggestive of metastatic lesions, although they might be gas shadows of the cecum.

Conclusions: Multiple metastatic bone lesions.

On the basis of the Xray pictures, the physician to whom I had sent the patient for a general check-up considered the case hopeless. I was less impressed by the Xray pictures than by the biological debility of the blood. Two physicians, friends of the family, declared that the patient would live hardly more than two weeks, while another physician, on the basis of the information from the hospital, thought it was a matter of at most two months.

a) The muscular armor.

The biophysical habitus of the patient, when first seen, was as follows: The chin was immobile; the patient talked through her teeth, as if hissing. The jaw muscles were rigid, as was the superficial and deep musculature of the neck. The patient held her head

somewhat pulled in and thrust forward, as if she were afraid that something would happen to her neck if she were to move her head. This attitude of head and neck seemed, at first glance, sufficiently explained by the fact that her fifth cervical vertebra was collapsed. She had been wearing a plaster collar for some time, and there was a good reason for fearing a fracture of the cervical spine with rapid or extreme movements. The patient's neurosis made the best of this situation. *As was shown later, the fear of moving the neck had been present long before the collapse of the vertebra.* More than that: this attitude of the neck was part and parcel of *a general biophysical attitude which was not a result but the cause of her cancer disease.*

The reflexes were normal. *Respiration* was severely disturbed. The lips were drawn in and the nostrils somewhat distended, as if she had to draw in air through the nose. The thorax was immobile. It did not perceptibly participate in respiration and remained constantly in an inspiratory position. When asked to breathe out deeply, the patient was unable to do so; more than that, she did not seem to understand what she was asked to do. The attempt to get the thorax into the expiratory position, that is, to push it down, met with a vivid active muscular resistance. It was found that head, neck and shoulders formed a rigid unit, as if any movement in the respective joints were impossible. The patient was able to move her arms only very slowly and with great effort. The handclasp, both left and right, was very weak. The scapular muscles were extremely tense, standing out like taut cords. The muscles between the shoulder-blades were sensitive to touch.

The abdominal wall was also tense and reacted to the slightest pressure with a marked resistance. The musculature of the legs seemed thin, as if atrophic, compared with the rest of the musculature. The pelvis was immobilized in a retracted position.

Superficial psychological exploration revealed the following: The patient had been suffering from insomnia for many years previous to the discovery of the cancer. She had been a widow for 12 years. Her marriage, which had lasted two years, had been unhappy. In contradistinction to the many cases of marital misery where the awareness of the unhappines is absent, the patient had

always been fully aware that her marriage was a failure. During the early months of her marriage, she had been much excited sexually and at the same time unsatisfied. Her husband had shown himself to be impotent. When, finally, the sexual act succeeded, he suffered from premature ejaculation, and the patient continued to be unsatisfied. During the first few months, her lack of sexual gratification made her suffer keenly; later, however, she "got used to it." She had always been fully aware of the necessity of sexual gratification, but had found no way of obtaining it. After the death of her husband, she devoted herself to the education of her child, refused any contact with men and withdrew from social activity. Gradually, her sexual excitation subsided. In its place, she developed anxiety states; these she combatted by way of various phobic mechanisms. At the time when I first saw her, she no longer suffered from anxiety states; she appeared emotionally balanced and somehow reconciled to her sexual abstinence and her personal fate in general. She presented the picture of neurotic resignation with which the character-analyst is so familiar; she no longer had any impulse to change her life situation. I avoided going any deeper into the patient's latent conflict and concentrated my attention on the organic changes which soon took place.

b) The results of the orgone experiment.

A detailed presentation of the technique of orgone therapy will be given later. Here, I shall mention only the essentials.

Our orgone therapy experiments with cancer patients consist in their sitting in the orgone accumulator. The orgone energy which is concentrated in the accumulator penetrates the naked body and is also taken up by way of respiration. The duration of the individual session depends on the atmospheric orgone tension which is measured electroscopically. I began with sessions of 30 minutes.

During the first session the skin between the shoulder-blades became red; this was a region which two months later was to play an important role in the patient's functional disease. From the second session on, the reactions in general were more distinct and intense. The pain in the region of the tenth dorsal vertebra regularly decreased *during* the treatment; this improvement usually lasted until the next session. Humid and rainy weather always intensified the pains. During the second session, the redness of the skin spread to the upper part of the back and the chest. When the patient interrupted the irradiation for a few minutes, the redness disappeared, to return as soon as she went back into the box. Beginning with the third session, the patient felt that the air in the box was "closer and heavier." She said, "I feel as if I were filling up," "I have a buzzing around the ears from the inside," "Something clears up in my body." During the third session, she began to perspire, particularly under the arms; she related that during the past few years she had never perspired.

All these reactions of the organism to the orgone radiation are typical in all cancer patients. In one patient one reaction will predominate, in another, a different one. Such phenomena as redness of the skin, lowering of the pulse rate, warm perspiration and the subjective sensations of "something in the body getting loose, filling up, swelling," etc., admit of only one interpretation: The cancer habitus is determined by a general contraction sympatheticotonia. For this reason, we find in most cancer patients rapid pulse, pallor and dryness of the skin, often with a cyanotic or livid coloration, reduced motility of the organs, constipation, and inhibition of the sweat glands. *The orgone energy has a vagotonic effect,* that is, it counteracts the general sympatheticotonic contraction of the organism. In the accumulator, the pulse will come down from 120 to 90 or from 150 to 110 within twenty minutes; this without any medication. Similarly, there is redness of the skin, and perspiration; the peripheral blood vessels dilate and the blood pressure decreases. Expressed in terms of biological pulsation, this means that *the plasma system relinquishes the chronic attitude of contraction and begins to expand vagotonically.* This expansion is accompanied by a reduction of the typical cancer pain.

The cancer pains are usually ascribed to local mechanical tissue lesions caused by the tumor. Doubtless this explanation is correct in one or the other case when the tumor presses on a nerve or a sensitive organ. The typical cancer pain, of which I am speaking here, however, has to be strictly distinguished from these local,

mechanically caused pains. Let us call it "shrinking pain." In order to understand its nature, we have to review a few hitherto generally overlooked facts.

Sex-economy had to give up the view generally held by medicine that the autonomic nerves in metazoa only transmit impulses but are themselves rigid. Such phenomena as the "pulling" pains remain unintelligible unless one realizes that the autonomic nervous system expands and contracts, that, in other words, it is mobile. This is confirmed, as stated before, by direct microscopic observation of translucid worms. We can see the fibers of the autonomic ganglia expand and contract; they move independently of the movements of the total organism; their movements precede those of the total body. The impulses appear first in the movements of the autonomic nervous system and are transmitted secondarily to the mechanical locomotor organs of the organism. This fact sounds revolutionary and strange. Yet it is, really, only a simple conclusion which I had to draw from the functions of pulsation in the organism and which afterward I was able to demonstrate by direct observation. *In the metazoon, the contracting and expanding ameba continues to exist in the form of the contracting and expanding autonomic nervous system.* This autonomic system is nothing but organized contractile plasma. Thus, the emotional, vegetative, autonomic movement is the immediate expression of the plasma current. The prevalent concept of the rigidity of the autonomic nerves is incompatible with every single phenomenon of biophysical functioning, such as pleasure, anxiety, tension, relaxation, and the sensations of pressure, pulling, pain, etc. On the other hand, the contractility of the autonomic nervous system, which forms a functional and histological unity ("syncytium"), explains in a simple manner our subjective plasmatic sensations. What we experience as pleasure is an expansion of our organism. The autonomic nerves, in pleasure, actually stretch out toward the world; the whole organism is in a state of vagotonic expansion. In anxiety, on the other hand, we feel a crawling-back into the self, a shrinking and tightness. What we experience here is the actual process of contraction in the autonomic nervous system.

The orgasm we experience as an involuntary expansion and contraction; this reflects the actual process of expansion and contraction in the total plasma system. The pain in cancer patients reflects the fact that the autonomic nerves retract from the diseased region and "pull" on the tissues. The expression "pulling" pain describes an actual process. It takes a mechanistically rigid, unalive, unbiological and unpsychological attitude to deny the simple and unequivocal fact that our organ sensations are identical with the actual processes in the autonomic system. Such a mechanistic concept relegates our organ sensations to the realm of metaphysics and cannot do justice to a single aspect of the cancer syndrome.

We understand now the seemingly strange phenomenon that in the orgone accumulator cancer pains regularly diminish or disappear. If the pains are not the expression of a local mechanical lesion but of a general contraction of the autonomic nerves, of a "pulling" at the tissues, then we understand that with the vagotonic expansion of the nerves the pulling, and with that the pain, subsides.

This fact reveals an essential effect of the orgone energy: *it charges living tissues and causes an expansion of the plasmatic system (vagotonia).*

The general vitalization of biological functioning by the orgone radiation is also reflected in the blood picture.

Our patient came with a hemoglobin of 35%. Two days later it was 40%; after four days, 51%; after a week, 55%; after two weeks, 75%, and after three weeks, 85%, that is, normal. The patient got up, took her child back to live with her and, after years of being bedridden, began to work again. She was inclined to overdo things; she went shopping, spending hours at a stretch in department stores. She was free from pain, slept well and felt entirely well. She did her housework all by herself. I had to remind the patient of the fact that she was getting over a very serious illness and had to warn her to take it easy. My warnings were justified. After about 6 weeks, the patient began to feel tired, and the hemoglobin dropped to 63%. The pains in the back did not return, but she began to complain about difficulties in breathing and

about a "wandering" pain in the ribs, in the diaphragmatic region. She was prescribed bedrest, and the hemoglobin content soon improved, returning to 83% after another week. The weight remained constant at about 124 lbs. After another four weeks, the hemoglobin was 85%.

The patient was no longer brought to me by car; she came every day by subway. Her relatives and physicians were amazed. As to the physicians, I met with a peculiar attitude which is incomprehensible from a rational point of view, an attitude which appears when, for a change, the case of a cancer patient is *not* hopeless. They did not ask how the improvement had been brought about. At the beginning, I had sent the patient to a physician who predicted that she would die within a few days. Now, the same patient was up and around and her Xray pictures showed complete ossification in a previously cancerous spine; similarly, the shadows in the pelvic bone had disappeared after two weeks' treatment. Yet, none of the physicians showed any interest in what was going on.

These Xray pictures showed the healing process unequivocally. They confirmed what I had seen so often in my cancer experiments with mice: the orgone energy arrests the growth of the tumor and replaces it by a hematoma which—under favorable conditions—is eliminated by connective tissue or, if the tumor is in a bone, by calcification.

c) Orgone-biophysical blood tests.

Every individual erythrocyte is an independent orgonotic energy vesicle. It follows the same pulsation and function of tension and charge as the total organism and each of its organs. With a magnification of about 3000x, expansion and contraction of the erythrocytes can easily be observed. Under the influence of adrenalin, the erythrocytes shrink, with potassium chloride they expand; that is, they follow the antithesis of pleasure and anxiety.

Our blood tests in cancer patients are done as follows:

1. *Culture test.* A blood sample is tested for bacterial growth in bouillon or in a mixture of 50% bouillon plus 50% KCl (0.1 n). The blood of advanced cancer patients *regularly gives a strong growth of T-bacilli* (*cf.* "Bion experiments on the Cancer Problem," 1939).

2. *Biological resistance test.* A few drops of blood in bouillon and KCl are autoclaved for half an hour at a steam pressure of 15 lbs. Healthy blood withstands the autoclavation better than the biologically devitalized blood of cancer patients. Biologically vigorous erythrocytes disintegrate into large blue bion vesicles. Devitalized erythrocytes in cancer blood disintegrate into T-bodies. *Depending on the degree of devitalization, the content in T-bodies increases and that of blue bions decreases.*

The orgone treatment charges the erythrocytes. This is shown by the fact that the T-reaction changes into a B-reaction; that is, the blood becomes more resistant to destruction by high temperatures.

3. *Disintegration in physiological salt solution.* A small drop of blood is put on a hanging-drop slide in 0.9% NaCl solution. According to their biological resistance, the erythrocytes disintegrate slowly or rapidly. The more rapidly they disintegrate, and the more rapidly their membrane shrinks and they form bion vesicles on the inside, the lower is their biological resistance. Biologically vigorous erythrocytes can retain their shape for 20 minutes or longer. Disintegration within 1 to 3 minutes indicates extreme biological weakness. In the case of marked anemia, the erythrocytes show the typical T-bodies, i.e., shrinking of the membrane.

4. *Blue orgone margin.* When observed with apochromatic lenses at a magnification of 300 — 600x, biologically vigorous erythrocytes show a wide margin of an intense blue color. Devitalized erythrocytes with a tendency to rapid disintegration show a very narrow margin with a weak blue coloration.

In our patient, the blood tests showed a general biological strengthening of the blood. When the patient first came, the blood cultures were strongly positive, that is, they showed intensive growth of T-bacilli. Three weeks later, the cultures were negative and remained so. The erythrocytes no longer showed shrinking and had a wide margin of deep blue. The autoclavation test resulted in 100% bionous disintegration and no longer in a T-reaction. The disintegration in salt solution now took place very slowly and without the formation of T-bodies.

The patient was free from pain and felt generally well, except that she reacted with malaise to rainy weather. She regularly came for her daily orgone treatment. The blood pressure remained constant at about 130/80. The pulse rate was and remained normal. There was only *one* symptom which not only failed to disappear but became more pronounced. This was a respiratory disturbance which at first was ill-defined.

d) The appearance of the cancer biopathy.

I shall proceed now to a description of the cancer biopathy which made its appearance only after the elimination of the tumors and the restoration of the normal blood picture. I did not have the faintest inkling of what I am going to describe here; I experienced it at first with utter amazement and lack of comprehension. It was difficult to understand the connection between the two series of phenomena. What happened was this: *After the cure of the local cancer tumors, a general biopathic disease picture appeared which previously had been hidden and which formed the actual background of the cancer disease: the shrinking biopathy.*

The patient seemed to have regained her complete physical health. This happy state of affairs lasted about six weeks and was objectively confirmed by the blood tests and the Xray pictures. The tumors had disappeared. The blood remained healthy, the anemia did not recur. The tumor in the left breast was no longer palpable after the eighth orgone irradiation. With purely mechanistic pathological concepts, one would have proclaimed a "cure" of this cancer case. At the same time, however, certain emotional symptoms became more and more pronounced and kept one from jumping to premature conclusions.

At the time when the patient first came she had not felt any sexual desire for a long time. About four weeks after the beginning of orgone therapy I observed in her signs of sexual stasis. Up to that point, she had been gay and full of hope for the future; now, a depression began to set in and she developed signs of stasis anxiety. She began to withdraw from people again. As I learned from her, her attempts to straighten out her sexual situation had failed. She related that for some time now she had been suffering

from intense sexual excitation; these excitations were much more intense than those which she had experienced 14 years earlier, at the beginning of her marriage, and which she had fought then. To judge from her description, it was a matter of normal vaginal excitations. During the first two weeks of getting well, she had made a few attempts to establish sexual contact; failing in this, she became depressed and felt physically exhausted. These attempts, which were entirely healthy, were continued for several weeks. One day she asked me whether it would be harmful to have sexual intercourse "once a month." The question had an apprehensive ring to it and was at variance with her sexual knowledge. It pointed to an irrational fear: she began to develop *the fear that a dangerous accident would happen to her in sexual intercourse, since, as she said, "her spine was demolished in two places."* She was afraid of what might result from the violent motions connected with sexual excitation. It is to be noted that this idea did not appear until *after the failure* of her attempts to find a sexual partner. She had met a man who proved impotent. She became furious but fought back her hatred and disillusionment. When another attack of anger would come, she would "swallow her anger." Now, the patient presented the complete picture of a stasis neurosis. The depression became more severe and she suffered from uncontrollable crying spells; she felt "a dreadful pressure in her chest—it goes through and through."

One might have been tempted to explain this "pressure in the chest" on the basis of the collapsed 12th dorsal vertebra. But simple consideration contradicted this assumption. For six weeks the patient had had no pain in spite of working hard; it was inconceivable that a *mechanical* pressure of the collapsed vertebra on a nerve should now suddenly become effective after not having made itself felt for weeks. What followed showed that the patient was developing an anxiety hysteria. This neurosis made use of the spine lesion as a rationalization. It was to be expected that from now on every psychiatrically untrained physician would ascribe all symptoms to the collapsed vertebra, overlooking the fact that this same vertebra had been no less collapsed at the time when the patient was going around without pain for a number of weeks.

After about ten orgone irradiations, the patient had begun to experience sexual excitation. The orgone energy had charged her biosexually, but she was unable to handle the sexual excitation. The anxiety neurosis which she now developed was only a reactivation of old conflicts; in puberty, she had suffered from similar states. The patient now found herself in the tragic situation of waking up to new life, only to be confronted by a nothingness. As long as she was ill, the tumor and resulting suffering had absorbed all interest. Indeed, her organism had used up great amounts of biological energy in the fight against the cancer. These energies were now free, and in addition were amplified by the orgonotic charge. In a phase of particularly intense depression the patient confessed that she felt herself ruined as a woman, that she felt herself to be ugly and that she did not see how she could suffer this life. She asked me whether the orgone energy could cure her anxiety neurosis also. This, of course, I had to deny, and the patient understood the reason.

Summarizing the sequence of events, we have the following:

1. In the beginning of the marriage, a severe stasis neurosis due to the husband's impotence.
2. Repression of sexual excitation resignation, depression and a decade of abstinence.
3. The sexual excitations disappear while the cancer disease develops. As we shall see later, *the cancer metastases developed exactly in those organs which played a dominant part in the muscular armor which repressed the sexual excitation.*
4. Elimination of the tumors by the orgone energy, physical recovery of the patient and reappearance of sexual excitability.
5. The high-pitched sexual excitation ends in disappointment; the old stasis neurosis reappears.

This constellation then resulted in a general shrinking of the vital apparatus.

One day there occurred a mishap. The patient left the orgone box and began to dress. She bent over to pick up a stocking and suddenly let out a shriek. We found her pale, with a thready pulse, on the point of fainting. We became frightened because we did not know what had happened. We, too, felt the collapsed vertebra

to be a Damocles' sword. Nobody knew when the patient might suffer a fracture of the spine. Just because this fear seemed justified, it lent itself so well to a rationalization of the patient's neurosis. When the patient calmed down it was shown that she had only experienced a fright. For a moment she had believed that by her swift movement she had really broken her spine. Actually she had only suffered a slight strain at the shoulder-blade; she had made too swift a movement with a hypertonic muscle. During the next few days, the patient felt well, but four days later she complained of heavy *"pressure in the chest"* and *"weakness in the legs."* During these days, the reflexes were normal. Three days later she again felt more strength in her legs, but the pressure in the chest persisted. On one of the following days, during a conversation in the treatment room, the patient suddenly cried out and doubled up, so that everybody present immediately thought of a fractured vertebra. Yet, all reflexes were absolutely normal. But now there was a new symptom which kept the patient in bed for many months and which deceived a number of physicians.

When the patient doubled up, she stopped breathing; she no longer could breathe out properly and kept gasping for air. I had the impression of a *spastic contraction of the diaphragm*, a diaphragmatic block.

The pain in the lower ribs about which the patient now complained could be ascribed either to this spasm or to the mechanical pressure of the collapsed vertebra on a sensory nerve. *The collapsed 12th vertebra corresponded to the costal insertion of the diaphragm.* What happened during the ensuing months was essentially a clash of opinions as to which of the two interpretations was correct. I advised the relatives to take the patient to the orthopedic surgeon whom she had consulted previously. The surgeon declared that the spine and the pelvis were free of shadows and metastases and that the patient's condition was due to a mechanical lesion at the 12th dorsal vertebra. What had made the metastases disappear he did not inquire about. He prescribed bedrest in a plaster cast. The patient's brother refused to take this advice because he had followed the course of his sister's disease

with great understanding and was convinced of the correctness of my interpretation.

It was during this period that I first began to understand the connection between the lesion of the 12th vertebra and the biopathic contracture of the diaphragm. It could be no accident that the diaphragmatic spasm—a symptom so well known to the orgone therapist—should appear just at this time. There also seemed to be significance in the fact that one of the main metastases had appeared just at the insertion of the diaphragm. This *concurrence of diaphragmatic spasm and lesion of the vertebra* complicated the clinical diagnosis considerably; on the other hand, it opened an avenue of approach to the understanding of the extremely important *connection between emotional muscle spasm and the localization of metastases.* One of the tasks of this discussion will be to demonstrate the fact that *the localization of a cancer tumor is determined by the biological inactivity of the tissues in its immediate neighborhood.*

The orgone treatment had to be interrupted because the patient was again bedridden. Renewed examination at a cancer hospital and by private physicians revealed calcification of the defects in the spinal column and the absence of cancer growths. The original breast tumor did not reappear. But nobody could foresee whether or not new cancer growths might appear. I saw the patient repeatedly at her home. She complained of violent pains in her lowermost ribs. The pain was neither constant nor definitely localized; it appeared at various places along the costal margin and could always be eliminated by correcting the breathing. The whole thing looked like a neuralgia with a marked hysterical component. The patient lay flat in bed and gave the impression of being completely unable to move. If one tried to move her arms or legs, she would cry out, become pale and would break out in a cold sweat. A few times I succeeded in getting her out of bed into an easy chair by making her breathe deeply for about 10 minutes. The relatives were amazed that I should be able to eliminate the pain so easily. They had seen the tumors disappear and had had this confirmed by outside physicians. As I worked without drugs or injections, my orgone therapy seemed mysterious. In order to

counteract this impression, I tried to explain to the relatives the mechanism of the disturbance. They realized very soon that the pain could not be due to the lesion of the vertebra, otherwise it would have been sharply localized and it could not have been eliminated by improved respiration. At that time, I had as yet no idea of the fact that in reality the patient did not have any pain *but a panicky fear of the onset of pain.*

An intercostal injection of an anesthetic was tried at the point where the pains were most violent. The anesthetic had no effect; shortly after the injection the pains appeared at *another* rib. The physicians who had been convinced that the pains were the result of the vertebral lesion finally had to admit that they were essentially "functional." But nobody could tell what was the "meaning" of the "functional" symptom. In addition, to most physicians "functional" means "not organic," that is, "not real but imaginary."

One day I found the patient again in violent "pain." She was gasping for air and produced peculiar groaning sounds. The condition seemed serious, but gave way promptly when the patient succeeded in breathing down and when the spasm of the jaw muscles was released. I turned over the work on the respiration to a colleague because I was going away for two months. He reported later that again and again it had been possible to eliminate the pains by establishment of full expiration.

The patient was taken to a cancer hospital once more. The hospital physician confirmed again the complete absence of metastases in the bones. He doubted that Xray therapy would eliminate the pains or that a surgical procedure at the nerve of the 12th segment would help. This was 5 months after the initiation of the orgone therapy, and 3½ months after its interruption. When the patient's brother told the hospital physician about the result of the orgone therapy, he became very reserved. He said he could not go into that until it was "recognized by official medicine" to which he shifted the responsibility for the recognition of the results of the orgone therapy in this cancer case.

The patient soon returned home and continued to lie flat in bed. The atrophy (of disuse) of her muscles progressed, and the danger of a recurrence of the tumors was considerable. A month

later, I saw the patient again. I succeeded again in eliminating the pains by improving respiration. The patient was able to get out of bed but felt very weak. One day, during one of these attempts to stay out of bed, I saw the patient develop severe anxiety; she implored me to be allowed to go back to bed. At that moment, *she had no pains.* I insisted on her staying up. All of a sudden, she began to tremble violently, was scared, broke out in a cold sweat and turned pale. In other words, she experienced a violent, shock-like reaction of the autonomic system to the standing up. I did not let the patient go back to bed because I noticed that *some fear made her want to go back to bed.* A few moments later, there were visible convulsions in the upper abdomen, and she gasped for air; the chronic spasm of the diaphragm dissolved itself into clonic convulsions of the abdominal musculature. After this, she felt greatly relieved and was able to move about freely.

Now, I understood a basic feature of biopathy. The biological charging of her organism by the orgone had resulted in sexual excitations; to these, she had reacted with a contracture of the diaphragm. (The repression of sexual excitation by way of a chronic attitude of inspiration is a phenomenon well known to the orgone therapist). This contracture of the diaphragm apparently caused the "pressure in the chest" and the pain-like sensations which were ascribed to the collapsed vertebra. The pressure in the chest disappeared every time I succeeded in overcoming the inspiratory spasm and thus in restoring the pulsatory movement of the diaphragm. But it was just these contractions and expansions of the diaphragm which caused violent anxiety which the patient tried to escape by falling back into the inspiratory attitude. As was shown now, the "danger" of a clonic dissolution of the contracture was too great when the patient was standing up or walking around. *The danger consisted in the violent convulsions which threatened to dissolve the diaphragmatic spasm. She did not dare leave her bed because she was very much afraid of these convulsions.* It was this fear, then, which kept her in bed, although it was not the exclusive motive for staying in bed.

Doubtless, the diaphragmatic spasm created neuralgic pains in the ribs and at the insertion of the diaphragm. But this spasm

accounted only in part for her enormous fear of motion; the more important part was her fear that if she moved she would "collapse" or "break her back."

The involuntary convulsions of the diaphragm which threatened to set in when she got up only seemed to justify this fear. Thus, she really did not suffer from acute pains, but from a *tremendous fear of sudden violent pains.* This fear was further increased by the experience of a few months before, when "something seemed to crack when she moved too suddenly." In other words, she suffered from a misinterpretation of normal orgonotic sensations such as accompany the movement of the diaphragm. Her staying in bed was a strong defense mechanism against the fear of "breaking apart." This fear would arise as soon as the diaphragmatic spasm was about to dissolve itself into clonic movements. This she would counter with an intensification of the diaphragmatic contracture. Of course, this fear and her reaction to it had far-reaching physical results, for it led to a general muscular tension which was to prevent any motion; the long duration of the consequent immobility led to an atrophy of the musculature. For example, she was hardly able to lift her arms; when she lifted her left arm, she lifted it with the aid of her right. She was unable to lift her legs and hardly able to bend her knees. The head was kept rigid. Passive movement of the head was strongly resisted. The patient was afraid of "breaking her neck." All physicians had warned her against rapid movements because the fifth cervical vertebra was collapsed.

On one of the following days I found the patient in a very bad condition. In spite of a strong urge to defecate, she had not gone to the bathroom for several days, in order not to have to leave her bed. As on previous occasions, the "pains" disappeared when the patient was made to breathe, and she was able to get up. She had an enormous bowel movement without any difficulty.

I told her brother that I would undertake an attempt at psychiatric orgone therapy for two weeks (without remuneration), but that I would have to stop if it showed no results. She moved to my neighborhood and for the next few weeks I worked with her for about 2 hours every day. This work disclosed the phobic background of the biopathic condition.

e) The characterological expression of the shrinking biopathy.

Six months after the collapse in my laboratory the patient developed a paralysis of the rectum and the bladder. The question was whether this was due to the local mechanical lesion or, as I suspected, to a functional shrinking of the autonomic system. In the first case, emotional motive would be absent and the symptoms would point to a sharply localized lesion. In the second case, one would expect prominent emotional and character disturbances and an inconstancy of the paralytic symptoms.

When I explained to the patient again and again her *fear* of the pains, she became capable of moving in her bed without any pain. In order to be able to move, however, she always first had to mobilize her respiration and to loosen up the spasms of her jaw musculature. As she put it, she always had first "to get rid of the fear of moving." In the case of mechanical lesion of the nerve, this would not have been possible.

When she succeeded in turning on her side or her stomach, she always seemed extremely exhausted. We looked for the reason for this peculiar exhaustion and finally found it in an extreme tension of the musculature of the neck and throat. The patient looked as if her head were being pulled into the thorax. It was the same attitude one involuntarily assumes to protect oneself against a sudden blow on the head. This muscular attitude was completely autonomic; the patient could neither control nor consciously loosen it. When this contraction of the musculature of the neck and throat occurred, respiration ceased and the patient's throat rattled as if she were choking. In order to loosen up the spasm, I had her stick her finger down the throat. To this she promptly reacted with a gag reflex which was so violent that she turned blue in the face. After a while she felt "greatly relieved in the throat."

In connection with these throat reflexes, she began to tell me spontaneously about her anxiety dreams. She dreamed every night, with intense anxiety, that she was *falling into an abyss;* that she was choking or that something was falling on her and she was being destroyed. With such dreams of falling the orgone therapist is very familiar. They occur typically toward the conclusion of a

character-analysis, at a time when pre-orgastic sensations in the abdomen and the genital begin to appear and are suppressed before becoming conscious. These sensations, if anxiety-laden, are experienced as *falling.* This is based on the following mechanism:

Pre-orgastic excitation is the onset of an involuntary convulsion of the plasma system. If the organism is afraid of this convulsion, it will develop—in the midst of an expansion which should end in a convulsion—*a counteracting contraction,* in other words, an *inhibition of the expansion.* This results in a sensation like that which one experiences when an elevator suddenly starts down or an airplane drops rapidly. *The sensation of falling is the perception of a contraction of the autonomic system in the process of inhibiting an expansion.* The typical falling dreams are often accompanied by a sudden contraction of the total body.

In the case of our patient this means the following: She reacted to vagic sensations of expansion regularly with spastic contractures; her organism became fixated, as it were, in the muscular spasms in the throat and the diaphragm, as if "not to lose hold." The fear of the convulsions diminished considerably when I succeeded in eliminating the spasms by eliciting the gag reflex. Then the movements which she executed in bed no longer resulted in spasms but in pleasurable sensations.

Every plasma current begins with a central contraction (tension) which dissolves itself into a vagic expansion; this can be directly observed in the ameba limax at a magnification of 2000x. The vagic expansion goes with the sensation of pleasure; in the case of orgasm anxiety, it is inhibited and results in muscular spasms. We understand now: *The patient suffered from a spastic reaction to vagic expansion as the result of orgasm anxiety. Biopathic shrinking begins with a spastic restriction of biological pulsation.* It differs from the simple sympatheticotonic stasis neurosis insofar as here, the impulses to expansion gradually subside, while in the stasis neurosis they maintain their intensity. A sharp distinction, however, cannot be drawn.

This mechanism of spastic reaction to vagotonic impulses of expansion functioned in a different manner in the different muscle systems. For example, when I tried to move the patient's arms

passively, she always reacted with a contraction of the shoulder musculature and the flexors of the arms; the reaction was similar to the muscular negativism and rigidity in catatonics. The patient presented the picture of a flaccid paralysis of the arms. When I asked her to hit my arm, she was at first unable to do so. But when I made her imagine that she was now letting out her suppressed anger, she was able, within five minutes, to get rid of the paralysis and to hit quite freely. At the end, she experienced pleasure in the motion and the action. The paralysis seemed to have been eliminated to a considerable extent. Thus, the patient was able to overcome her fear of expansion and of the plasmatic pulsation temporarily. This regularly improved her general condition considerably.

The same thing could be observed when I sat her up passively in bed. She always became frightened, began to gasp for breath, turned pale and repeated several times, with an expression of severe anxiety, "You shouldn't have done that." But when I repeated the procedure several times she even became able to sit up by herself. She was absolutely amazed and said, "It's a miracle how this is possible."

From then on, I had the patient continue to elicit the gag reflex, bite the pillow, hit my arm, etc.; all this in order to produce clonic contractions in the musculature of the throat and the shoulders. I knew from experience that biological energy which is bound in spastically contracted musculature can be released only by clonisms. So it was in this patient. After about half an hour of *active* production of various reflexes, *involuntary clonic spasms began to set in in the musculature of the arms and the shoulders.* The legs also began to tremble. This trembling could always be intensified by gentle flexion and extension.

When these spasms appeared for the first time, the patient became very much frightened. She did not know what was going to happen to her. It was the very same fear of involuntary contractions which she avoided by her spastic contractures. After a few minutes, however, she began to enjoy the spasms. Gradually, the musculature of the throat began to participate in the spasms; the patient was afraid she was going to vomit. At one point she

looked as if she were going to faint. I asked her to give free rein to the spasms. After a while they became less intense; the biological energy had been discharged. She sank back in the bed exhausted, her face was red, her respiration deep and full. The gag reflex could no longer be elicited, and the patient said, "My throat is peculiarly free—as if a pressure had been taken away." Similarly, the pressure on the chest had disappeared.

On the following day, the patient breathed normally, and I proceeded to relieve the paralysis of the legs by producing clonisms of the leg musculature. This was possible to a certain degree by slowly moving the legs, which were bent at the knees, apart and again together. I had not prepared the patient for the pre-orgastic sensations which are likely to appear with the dissolution of contractures in the leg musculature. All of a sudden, she inhibited her respiration, set her jaw, turned pale and developed a facial expression which I can only describe with the word "dying." The reaction was so violent that I became frightened. There could, however, be no mechanical lesion, for I had moved the legs only very slowly and gently. The patient emitted sounds such as one makes with the most severe pains in the chest. The sounds were a mixture of groaning and rattling. From vegetotherapeutic experience I knew that this was the patient's reaction to vegetative currents in the genital. We know from vegetotherapy that orgastic sensations, when inhibited by orgasm anxiety, are experienced as *a fear of dying;* "dying" in the sense of falling apart, melting, losing consciousness, dissolving, "nothingness."

The patient groaned heavily, was pale and blue, turned her eyes up and seemed exhausted. Never before had I seen the neurotic reaction of dying so realistically. With all the work on disturbances of the orgasm I had done during twenty years, I had still underestimated the depth at which the disturbances of the function of biological pulsation are at work. True, my contention had always been that the orgasm is "basic biological functioning *per se.*" But never before had I seen an organism "die" so realistically as a result of orgasm anxiety. I told the relatives that quite possibly the patient would not survive more than a few days. It was clear to me that the shrinking of her vital system might well

continue into actual death. This being the case, I would have relinquished any further efforts had it not been for the fact that seven months earlier, when the patient first came to me, she had also been on the point of dying. There was nothing to be lost by going on and a great many insights into the nature of the shrinking biopathy to be gained.

The following day I was called on the telephone by the relatives who said the patient was actually dying, that she was hardly breathing at all and was unable to have a bowel movement. When I saw the patient, she really seemed to be dying. Her face was blue and sunken, she emitted rattling sounds and whispered, "This is the beginning of the end." I found her pulse to be rapid but forceful.

In the course of about fifteen minutes, I was able to establish a good rapport with the patient. I asked her whether she had had—at any time previous to her developing tumors—the feeling that she was going to die. Without any resistance, she related that *as a child she had often rolled her eyes up and played at "dying."* The rattling and groaning sounds which she made now were also familiar to her from her childhood. She used to make them when she felt a constriction in her throat; as she put it, "when something pulled together in her throat." Now it became clear that the localization of *one of the cancer metastases at the fifth cervical vertebra was due to a spasm of the musculature* of the throat which had been present for decades. The sensation of constriction in the throat, the patient continued, went hand in hand with a pulling in of the shoulders and a tension between the shoulder-blades, that is, at exactly the region where later the cancer pains developed.

Now that the patient talked with me wide awake and lively, I made her "play at dying." Within a few seconds, she succeeded in producing consciously the same picture by which she previously had been overcome involuntarily. She turned her eyes upward so that the lids were closed except for a narrow slit through which the whites of her eyes were just visible, fixed her chest in the inspiratory position and emitted groaning and rattling sounds. It was not easy to bring her back out of this dying attitude; but the more frequently she assumed this attitude consciously, the easier it became for her to give it up again. This was entirely in accord with orgone-therapeutic experiences: *by practice, an autonomic function can be made objective and finally subject to conscious control.*

I asked the patient whether she thought that she was unconsciously committing suicide. She started to cry and said there was no point in going on living. Her illness had ruined her sexual attractiveness; she could never again be happy; and without happiness she did not want to live. I had the patient again elicit the gag reflex. Promptly, the clonic trembling in the arms and the throat reappeared, though not as strongly as the day before. She even succeeded in sitting up by herself, but her legs failed her. I had the impression that the upper part of her body was functioning while the lower part, from the hips down, failed to function.

For several days after this, the patient felt well and gay. One day, however, she suddenly relapsed into the dying attitude. I saw immediately that it was not play-acting, but that she was overwhelmed by her biopathic reaction. Her respiration was shallow and labored, her nose pointed, her cheeks were sunken and her throat rattled heavily. I did not understand why this happened just at this point. She complained of violent pains and was completely unable to move. I succeeded again in restoring normal respiration. Again, intense clonic spasms occurred in the throat and the torso, but the lower extremities remained "dead." I had her again elicit the gag reflex. After this, the spasms became more intense.

I noticed that the pelvis tended to participate in the spasms but that she held back. The spasms lasted for about ten minutes and then subsided. While previously one had had the impression of suffocation, now the patient showed definite vagotonic reactions: the face was flushed, the skin over the body was no longer pale. The pains due to the diaphragmatic spasm subsided. After a while, the patient began to talk. She was, as she said, afraid that "something was going to happen down there." She related that up to the time when she came to me for treatment she had occasionally obtained sexual gratification by masturbation. This was a very

belated correction of her earlier statement that she had been living in complete abstinence for over 10 years. As early as the first week of the orgone treatment, she had suppressed every impulse to masturbate because of phantasies of sexual intercourse with me. Since then she had not dared to touch her genital. The inhibition of masturbation, together with the phantasy, led to a stasis of sexual excitation, which, furthermore, was intensified by the biological charge by the orgone. The intensification of her sexual needs increased her anxiety. Thus she developed the phantasy that she might break her spine. The straining of the shoulder muscle when she tried to pick up her stocking seemed to confirm this fear, as if she had said to herself, "See, I knew it was going to happen."

The day after she had told me about her masturbation phantasies, I found her in the best of moods, full of hope and without complaints. The talk of the day before had made it possible for her, for the first time in months, to masturbate again. She had experienced a good deal of satisfaction. She was now able to control her diaphragmatic spasm very well. She was constipated, but felt the urge for defecation; only her fear of motion kept her from going to the bathroom. She moved much more easily in bed. She was even able to sit up all by herself, which amazed and pleased her a good deal. For the first time, she understood the chain of causes and events: fear of spinal fracture→fear of pain→inhibition of respiration by diaphragmatic block→pain in the chest→fear of spinal fracture. Now, however, the inhibition of motion by the fear of pain did not set in so readily. The fear did not appear until the motion required a good deal of effort. We now understood the connection between her fear of spinal fracture and her fear of "motion."

On the next day, I found the patient again with poor respiration, full of complaints, and assuming the dying attitude. She could not say what had brought this about. The relatives told me that the day before she had felt very well until the evening. Then things had taken a turn for the worse after the following episode. Her boy was in the bathroom adjoining her room. She heard a noise and got terribly frightened. All of a sudden she had the idea

that the boy was closed in in a very small space and was going to be smothered. During the night she slept poorly and had a number of severe anxiety dreams, some of them falling dreams. All I could do on this day was to improve her breathing which reduced her complaints about the "pains."

During the next few days, the patient felt much better, being able to move without pain and to lift her legs. During a treatment hour, she happened to get to the edge of the bed, whereupon she became pale, stopped breathing, and cried out. *She was afraid of falling out of bed.* Her reaction was clearly exaggerated and did not correspond to any real danger. She related spontaneously that the summer before, at the hospital, she had asked to have an additional bed put at each side of her bed, because she was afraid of falling out of bed. I lifted her toward the edge of the bed, and although I held her firmly, she yelled with fear. The *fear of falling* which was at the basis of her fear of motion was now quite evident.

On the next day she sat up in bed. She had no pain, but developed violent anxiety, broke out into a sweat and hysterical crying. She said she was going to die; that she had been fighting death for so long, but this was the end. She cried for her boy. She asked me for an injection which would make her die so that she did not have to suffer any longer. "I don't want to get out of bed, I want to stay right here." After a while, she quieted down and found to her great surprise that she was able to sit up without any effort. But gradually she developed violent clonic spasms all over her body, particularly intense at the shoulders. She was extremely afraid of these spasms; that was the reason for her staying in bed. Whenever she was forced to sit up she felt the spasms coming. She no longer had her fear of falling, but the connection was clear. The violent clonic spasms of her musculature formed the physiological basis of her neurotic fear of falling. During the night, she had nightmares of falling into great depths, of heavy things falling on her, of men attacking and threatening to *choke* her. Now she remembered that she had suffered from exactly the same anxiety states for a long time in adolescence. She also remembered a phobia she used to have at that age. When she would walk on the street and hear footsteps behind her, she would begin to run, for

fear that "somebody was after her." This fear usually was so intense that her *legs "failed her"* and she always had the feeling that she was going to fall down. She recognized in this the very same bodily sensation which she experienced when she had to sit up in bed now. Then also, her legs would fail her and she became afraid of falling. With that, she would have the sensation of a spasm of the diaphragm and would be "scared to death."

All this shows unequivocally that the motor paresis of the legs was caused by a phobia, *a phobia which had dominated her as far back as puberty, long before she had developed cancer.* The paresis which she now had developed was nothing but an intensification of this old motor weakness in the legs. This old fear of falling now became associated with the idea of the spinal fracture and was thus thoroughly rationalized. The old phobia of falling was the real forerunner of her later paresis.

The day before she had had to go to the bathroom all the time. The movements of her intestines and bladder were "extraordinarily lively." The previous night she had been restless. In the late forenoon, she felt unable to urinate. She felt her legs were without sensation. On examination, I found a reduced sensitivity to pin pricks up to the 10th segment. The knee jerk, the Achilles reflex and the abdominal reflexes were normal. I had been told on the telephone that she was unable to move her legs. In reality, the motility of the legs was only reduced, but not absent. The deep sensitivity of the joints of the toes was reduced. It was the picture of a functional paresis. There were no definite symptoms either of a flaccid or of a spastic paralysis. The only point in support of the assumption that the lesion of the 12th vertebra had something to do with it was the fact that the sensory disturbance in the upper abdomen had a fairly sharp upper limit.

The next day, the patient was again able to urinate, but three days later she became unable to control her anal sphincter. The reflexes were normal, but the patient's fear of sitting up returned.

She was again taken to a hospital for a general check-up. Xrays showed the spine, pelvis and legs free from metastases, but there were new metastases in the cranium and in the humerus. That is, *the new tumors made their appearance far away from those regions which showed the paresis. Functional biopathy and carcinomatous growth had nothing to do with each other.*

The patient remained at the hospital for two weeks. No neurological examination was done. The paresis of the legs was considered a result of the vertebral lesions; none of the physicians discovered its functional nature. They told the relatives that the patient would live for two weeks at best.

As nothing was done for the patient at the hospital except that she was given morphine injections, the relatives took her back home. I saw her on the day of her return. She was very apprehensive about her motions and stressed the fact that the hospital physicians had warned her to be extremely cautious in her motions because "the spinal column was pressing on the nerve and it might break." This admonition on the part of the physicians naturally confirmed and reinforced the patient's phobia. The relatives wished me to undertake another experiment with orgone in order to eliminate the tumors of the cranium. On that day, I was not able to palpate any tumors at the cranium.

I observed the patient for another four weeks at her home. During this time, *all reflexes at the legs were normal, the bowels and the bladder functioned normally again.* However, the atrophy of the musculature and the bones progressed rapidly. She had developed a putrid bedsore at the buttocks. The legs moved in reaction to painful stimuli, but showed few spontaneous impulses. She continued to have nightmares of men falling into an abyss, of an elephant charging at her and of being "as if paralyzed," unable to move. During the day, also, she felt anxiety in the eyes and in the chest. The pains had completely disappeared, but the fear of motion and of spinal fracture persisted.

We had a special orgone accumulator built for her bed. The effect of the orgone showed itself in a reduction of the pulse rate from about 130 to between 80 and 90, in a general feeling of well-being and the disappearance of anxiety. The blood picture, which in the past few months had taken a turn for the worse (50% Hb., T-bodies, positive T-cultures, about 50% T on autoclavation) also improved rapidly. The impulses in the legs increased in frequency and intensity.

Then there occurred a sudden and unforeseeable catastrophe which sealed the fate of the patient. One night, as she moved in bed, she fractured her left femur. She had to be taken to a hospital. The physicians were amazed at the thinness of the femur. They could not understand how the breast tumor could have disappeared. The patient was given morphine, declined during the following four weeks and finally died.

The orgone therapy had prolonged her life for about 10 months, had kept her free of cancer tumors and cancer pains for months and had restored the function of her blood system to normal. The interruption of the orgone treatment by the biopathic paralysis interdicts any conjecture as to a possible favorable outcome. What is certain is that in this case the real cause of death was the biopathic shrinking, and not the local tumors.

This case has given us important insights into the emotional and vegetative background of the cancer disease. Now we are confronted by the important question as to *what takes place in the blood and the tissues as a result of the biopathic shrinking;* in other words, the question as to how the general shrinking of the autonomic system produces local tumors. I may anticipate: *The general result of biopathic shrinking is putrefaction in the blood and the tissues. The cancer tumor is only one of the symptoms of this process of putrefaction.* This finding requires extensive clinical and experimental substantiation; this will be given elsewhere.

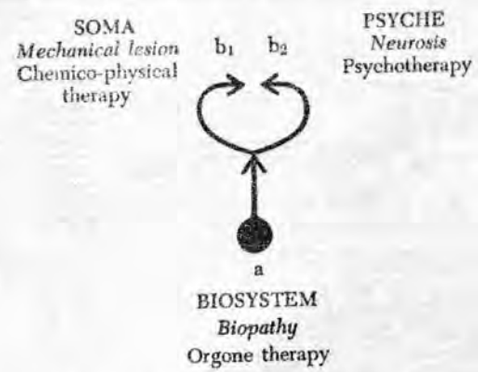
5. THE NATURE OF FUNCTIONAL DISEASE

Let us briefly review our observations. The "dying" of the patient in the biopathic attack did not in the least give the impression of hysteria or simulation. The autonomic system reacted in such fashion that actual death was by no means improbable. The sunken cheeks, the cyanotic color, the faint, rapid pulse, the spasm of the throat, the failure of motility and the general physical debility were dangerous realities.

I venture the statement that each of these attacks was the beginning of an actual cessation of the vital functions. It was possible, by dissolving the spasms and by breaking the diaphragmatic block again and again to interrupt the process of dying. Death was

again and again counteracted by vagotonic expansion. This cannot be a matter of *suggestion*. Suggestion in the usual sense could not possibly penetrate into these depths of the biological apparatus. What was possible, however, was to elicit the biological impulses to expansion in various bodily systems and thus, month after month, to arrest the shrinking process again and again. In order to do this, a good rapport with the patient, as a *part* of the orgone-therapeutic technique, was, of course, indispensable. Only in this aspect of the procedure might one be justified in speaking of suggestion.

Let us go back to our familiar diagram of psychosomatic functioning and try to find out at which place in the vital apparatus the biopathy (in contrast to a mechanical lesion), as well as the orgone-therapeutic experiment, takes effect:



Every lasting energy stasis in the *biological* system (a) must of necessity manifest itself in *somatic* as well as *psychic* symptoms (b_1 and b_2). Psychotherapy attacks the psychic symptoms, chemico-physical therapy the somatic symptoms. *Orgone therapy* has as its starting point the fact that psyche as well as soma have, from a point of view of bio-energy, the same root in the pulsating plasma system (blood and autonomic system). Orgone therapy thus influences not the psychophysical function itself, but the common basis of psychic as well as somatic functions; it does this by eliminating the *inhibitions of biological functioning*, such as

the respiratory block, the inhibition of the orgasm reflex, etc. Thus, orgone therapy is neither a psychic therapy nor a physiological-chemical one; *it is biological therapy directed at the disturbances of pulsation in the vital apparatus.* Since these disturbances show their effects in all the more superficial layers of the psychosomatic apparatus—for example, as hypertension and cardiac neurosis in the somatic, as phobia in the psychic realm—orgone therapy, of necessity, reaches these symptoms in the superficial layers also. Orgone therapy, thus, is the most advanced existing method for the influencing of biopathic disturbances. For the time being, its field is limited to the biopathies. In the cancer biopathy, the orgone-therapeutic treatment of the disturbances of respiration and of the orgasm is supplemented by the *physical* orgone therapy which is directed at the anemia, the T-bacilli in the blood and the local tumors. As will be shown, we are fully aware of the enormous complexity of the problem as well as of the largely experimental character of this cancer therapy.

According to the prevalent concepts there are only mechanical or chemical lesions of the somatic apparatus on the one hand and functional disturbances of the psychic apparatus on the other. Orgone-biophysical investigation of the cancer shrinking biopathy reveals a third, more deep-reaching disturbance: *The disturbance of the plasma pulsation at the common biological basis of soma and psyche.* What is fundamentally new here is the finding that *the inhibition of the autonomic sexual function can produce a biopathic shrinking of the autonomic nervous system.* The question remains whether this etiology can be found in all forms of cancer.

There is a general misconception that the organism is divided into two independent parts: one is the physico-chemical system, "soma," which is destroyed by such agents as a cancer; the other is the "psyche" which produces hysterical phenomena, so-called conversion symptoms, in the body, and which "wants" or "fears" this or that and has nothing to do with the cancer. This artificial splitting up of the organism is misleading. It is not true that a psychic apparatus "makes use of somatic phenomena"; nor is it true that the somatic apparatus obeys only chemical and physical

laws, but does neither "wish" nor "fear." In reality, *the functions of expansion and contraction in the autonomic plasma system represent the unitary apparatus which makes the "soma" live or die.* Our patient demonstrated *the functional unity of psychic resignation and biopathic shrinking exceedingly well.* In her, life began to function poorly; the function of expansion began to fail. To express it psychologically: there was no impulse behind motion, action, decision and struggle. The vital apparatus was, as it were, fixed in the reaction of anxiety; psychologically, this was represented in her fear that motion might result in a fracture somewhere in the body. Now, motion, action, pleasure and expansion appeared to be "a danger to life." The characterological resignation *preceded* the shrinking of the vital apparatus.

The motility of the biological plasma system itself is damaged by the biopathic shrinking. The fear of motion has its basis exactly in this vegetative shrinking. The plasma system shrinks, the organism loses its autonomic balance and the self-regulation of locomotion. Finally, a shrinking of the body substance sets in.

The inhibition of plasmic motility by the shrinking fully explains all aspects of the disease picture; it explains neurotic anxiety as well as functional paresis, the fear of falling as well as the muscular atrophy, the spasms as well as the biological disturbance which breaks through as "cancer" and finally ends in general cachexia. For it was possible again and again to make the patient develop new living impulses by correcting her breathing. The diaphragmatic spasm is the central defense mechanism in the biopathic disturbance of the organism: The patient really breathes poorly; she really ventilates her tissues insufficiently; the plasmatic locomotor impulses are actually insufficient for the maintenance of co-ordinated movements; the fear of falling and of suffering damage has a real basis and is not "imaginary"; more than that, *the imagined catastrophe of falling has itself a real basis in the restriction of biological motility.* The hysterical, functional character of the paresis thus gains a factual biopathological basis. There is a difference only in degree between hysterical paralysis and paralysis as a result of biopathic shrinking.

In medicine, functional paralyses are usually looked at with

some irony; the concept is still prevalent that a functional paralysis is more or less "simulated." I would like to state that functional disturbances of motility are *much more serious and far-reaching* than are paralyses which result from a mechanical lesion. In the case of the mechanical lesion, the biological functioning of the total organism is not affected. A *functional paralysis*, on the other hand, *is the expression of a total biological disturbance.* In this case, the function of plasmatic impulse formation in the biological core of the organism is itself disturbed and may result in a more or less extensive loss of tissue (muscular atrophy, anemia, cachexia, etc.). To say that the mechanical lesion cannot be influenced by suggestion, while the functional disturbance is amenable to suggestion, means nothing. For the "suggestion" which may bring about an improvement in the functional paralysis is in reality nothing but a pleasurable stimulus for the biological system and thus causes it to reach out for new life possibilities and to function again.

The basic disturbance in the functioning of the body plasm, represented by chronic sexual stasis, character rigidity and resignation, and by chronic sympatheticotonia, is to be taken much more seriously than the mechanical lesions. The mechanistic and purely materialistic concepts of medicine of today have to be partly replaced and partly overcome by a functional concept. This functional concept made it possible to make a breach in the wall which hitherto has made the cancer problem inaccessible.

6. THE SEX-STARVATION OF THE ORGANISM IN CHRONIC SEXUAL ABSTINENCE. ILLUSTRATED BY A CASE OF SHRINKING BIOPATHY WITHOUT TUMOR

I had occasion to observe another case of carcinomatous shrinking biopathy which confirms and amplifies the earlier observations on the biopathic shrinking. This case, like the first, clearly demonstrates the social and sexual background of the carcinomatous shrinking biopathy. At the same time it shows the possibilities which the orgone therapy of this disease opens to the physician and the educator. The responsibilities which the sexual biopathies impose on the sex-economist and psychiatrist are tremendous. Unavoidably, the knowledge of the nature of the biopathies can be gained only bit by bit, from case to case. One case will leave questions unanswered which the next case will answer, while it, in turn, opens up new questions. All these problems are accessible only to the psychiatrist who thinks in terms of sex-economy. To the mechanistic pathologist they are and will remain a closed book.

A sex-economist, an outstanding co-worker of our Institute, had treated a woman with a severe character neurosis and had brought about a striking change in her within a few months. An acquaintance of hers noticed this change. She knew of a thirty-year-old woman who for two years had suffered from a disease which no physician seemed to be able to explain. In this way, the patient came to my laboratory.

The first impression I gained of her was this: She had a facial expression which could be described only with the word "death mask." The skin of the face was pale and somewhat livid. The cheeks were sunken so that the jawbones protruded sharply. The eyes had a tired, veiled, hopeless expression. The corners of her mouth were drawn down, expressing deep resignation and depression. The body was thin; ribs and vertebrae stood out. The musculature all over the body was so thin that there could not be any doubt about the presence of an atrophic process. Movements were tired, slow, somewhat dragging. The patient spoke slowly, as if with great effort, without facial expression. The voice was monotonous and without force. It looked as if all activity were held back, as if there were not sufficient energy behind the impulses. The bones of the pelvis also stood out. Hands and feet were cold, pale and clammy. The patient seemed to want to establish contact with me without being able to come through.

Her weight was 90 lbs. During the previous 4 weeks, she had lost 10 lbs. Two years previously, her weight had been 120 lbs. She had always been rather thin since the age of 5; up to that age she is said to have been rather fat. After that, she grew rapidly and became thin. Ever since, her weight had been below average. As a child she had had measles and whooping-cough. She had frequent "colds," up to now, and had an adenoid operation. Menstruation began at the age of 14 and was regular, every four

weeks, but always lasted a week or longer and was very painful.

Five years ago, she went to a psychiatrist in an attempt to straighten out her sexual difficulties. Since the age of puberty she had been convinced that "she was not all right sexually." She often had to interrupt school in order to "build up her health." She often felt weak, tired easily and could not keep up with the schoolwork. The simplest task seemed tremendous. She suffered from severe depressions and chronic lack of vitality. Her resignation gradually turned into complete inactivity.

Her mother had undergone a total extirpation of the uterus for cancer, but died later of bone metastases. According to the patient, the mother was a very quiet person, very much devoted to her children. She died as resignedly as she had lived.

The patient's education with regard to sexuality had been very strict and ascetic. She had never had sexual intercourse. She was never allowed to go to dances. During puberty, she had for a time the urge to become acquainted with men, but her attempts failed. Her strictly religious family tolerated no situation which might have become "dangerous." In trying to break through these external barriers, she found that she was suffering from insuperable *internal* barriers which made it impossible for her to approach a man. This condition had set in in late puberty and had persisted to date. It was the main reason for her depressions and her withdrawn way of living. In spite of the fact that she was pretty, men seemed to avoid her. A few times it seemed that a friendship might develop. But none of them had a chance to develop, because at the mere thought of physical intimacy, a *spasm of the genital organs* would inevitably set in. As time went on, she developed a fear of these painful spasms and avoided anything which might possibly lead to sexual activity. She knew that this was pathological but she saw no way out. She did not dare ask a physician's advice or talk to anybody else about it. In brief, she resigned herself. She had never masturbated although her genital excitation made her suffer. She only used to keep her hands at her genital at night. Unlike similar cases of sexual abstinence, she had good insight into her disturbance. She was little inclined to camouflage her disturbance with ascetic ideologies. Her suffering, therefore

was all the more intense. She expressed herself rather uninhibitedly about it during the first interviews. I shall interrupt the description of her abstinence here and come back to it later.

The serious condition of the patient required a thorough physical examination. The result was highly surprising. The physician who examined her prescribed a diet but found nothing wrong with her physically. His report was as follows: "This is to certify that I have given Miss X a complete physical examination, including blood and urine examination, and find her to be in good health." This finding contradicted the patient's appearance so much that at first I did not understand it. After all, the patient had lost 10 lbs. in 4 weeks; her weight, although she was tall, was only 90 lbs.; for two years, she had been incapable of working, had been lying around at home, feeling weak and incapable of any social contact. To overlook the biopathy resulting from abstinence was only usual, but the loss of weight was hard to overlook, and so was the general impression given by the patient. Such an oversight is possible only because physicians are trained exclusively for mechanical and chemical examinations. They overlook a severe biopathic picture very frequently, simply because they have not learned to pay any attention to the *bodily expression* and to the *mode of sexual living*.

The patient had a swelling the size of a bean at the outer margin of the right breast. I asked her whether the physician had noticed it. He had. But since this tumor alternately grew bigger and again smaller, he had made the diagnosis of a harmless glandular enlargement, apparently on the assumption that a malignant tumor would keep on growing and would not spontaneously recede. This small tumor had been present for about a year, without ever growing beyond its present size. In order not to frighten the patient, I refrained from having a biopsy done. Since the patient wished to undergo the orgone therapy experiment, there was no reason why I should not wait to see whether the tumor would disappear after a few irradiations. If it would disappear *rapidly*, it would have been a malignant tumor. If it took many weeks or even months to disappear, or if it neither receded nor grew, it

would have shown itself to be a harmless glandular enlargement. In addition, we had our cancer tests to aid us in arriving at a definite diagnosis.

All of these tests were *positive*. The examination of the rate of disintegration of the erythrocytes showed bionous disintegration and the formation of T-spikes in about one minute. The orgone margin of the erythrocytes was narrow and only slightly blue. The hemoglobin content was normal. The culture test showed cloudiness of the bouillon after 24 hours. Inoculation on agar and Gram stain revealed the typical growth of T-bacilli. The autoclavation test of the blood showed a strong T-reaction of the erythrocytes (about 60%).

These results of the cancer tests, together with the biological condition of the patient, definitely established the diagnosis of an *advanced* carcinomatous shrinking biopathy. Whether the swelling in the right breast was carcinomatous or not was of small significance. I felt that the patient would not live beyond another year.

I notified a near relative whom I had give me a written statement to the effect that the diagnosis was cancer and that I could not promise any cure. I warned the relatives that, if the orgone therapy experiment should fail, rapid deterioration and early death were to be expected. I knew that no physician could deduce cancer from the present disease picture and with the customary methods. But even if a physician, on the basis of the poor general condition, had suspected cancer, there would not have been any method of treatment except the orgone, for there were no local tumors which, with customary diagnostic methods, could be diagnosed as cancer.

The patient started with daily orgone irradiations in my laboratory. Later she ordered an orgone accumulator and took two daily irradiations of half an hour each; one in the early morning, after the bath, and one in the evening before retiring. The result of this treatment, in the course of the next 8 weeks, was as follows:

Weight: After one week, no increase, still 90 lbs.; after six weeks, 95 lbs.; after 3 months, 100 lbs.; after 4 months, 102 lbs. In other words, the shrinking process had not only been arrested, but the increase in weight became progressively more rapid.

Growth of T-bacilli in blood medium: After five weeks, bouillon as well as agar cultures were negative, and remained so.

Autoclavation test: After three weeks, no improvement; still about 50% T-reaction. The blood bion solution did not have the character of a pure colloid, but showed, as is usual in advanced cancer, a blue-green discoloration.

Tumor of the breast: After 10 days of orgone irradiation, the tumor was no longer palpable. (Observation of earlier cases had shown that orgone therapy eliminates breast tumors of medium size in a space of two to three weeks).

These observations were of signal importance for the orgone therapy experiment. They showed that an advanced carcinomatous condition can exist in the absence of any conspicuous *local* manifestation. This confirmed my earlier conviction that the essence of the cancer disease is a general shrinking of the vital apparatus; that the local tumor is not the disease, but only one of the symptoms. These observations showed further that customary medical training does *not* enable the physician to diagnose cancer until *conspicuous local manifestations* make their appearance. They proved, furthermore, the usefulness of our biological blood bion tests in cases where the usual methods of examination do not yet reveal cancer. Even if a surgeon had suspected the tumor of the breast to be cancer and had operated, the general shrinking biopathy would have, nevertheless, persisted, and the patient would have died from it. In any case, it is inconceivable that this very small tumor, without metastases in the axillary glands, could have been the *cause* of the poor general condition. The tumor was of a more recent date than the general shrinking condition. The existence of a "carcinomatous shrinking biopathy *without* tumor" is an established fact. It remains to be seen how frequent such cases are. At any rate, the possibility of orgone therapy divests the disease of much of its horror, no matter how many detail problems remain to be worked out. In this case, the therapeutic orgone experiment was successful. It has the right to be tested and developed on a large scale.

When the first number of the *International Journal of Sex-economy and Orgone Research* appeared, a well-meaning physician

said that sex-economy was very important and quite correct, but "what on earth did it have to do with cancer?" He thought it a mistake to talk about cancer in the first number of the Journal: that would only prejudice people against sex-economy, he reasoned. Many others show astonishment and incredulity when I call cancer a sexual biopathy or a sex-starvation scourge. These reactions show that the central point of our work has not been grasped:

The diseases resulting from sexual stasis are severe biopathic diseases of the organism. Cancer biopathy is one of the diseases in which the chronic disturbances of the sexual economy express themselves. Cancer is a sexual biopathy or sex-starvation disease. Therefore, sex-economy and cancer research are inseparable. "Character-analysis," "vegetotherapy" and "orgone therapy" may appear as different therapeutic methods, but they are, basically, *one and the same orgone therapy*, working in a *unitary* organism. They have a common root in the biosystem. Their superficial differentiation corresponds to the superficial differentiation of the total organism into biophysical, characterological and physiological functions.

I had the patient examined by a gynecologist. This examination confirmed my diagnosis of plasmatic shrinking: The uterus was very small, the ovaries could not be palpated on rectal examination. The breast glands seemed to be completely undeveloped. Whether we are dealing here with an atrophy or a primary underdevelopment of the sexual organs is, of course, difficult to say. The gynecologist thought it was a matter of primary hypofunction of the ovaries. Our theoretical concepts do not admit of the assumption of such a primary and isolated ovarian disturbance. For the ovaries do not function independently, but are a part of the total functional system of the autonomic life apparatus and dependent on it. On the basis of the sexual history of the patient, I am inclined, therefore, to consider the underdevelopment of her breasts and genital organs an *atrophy of disuse*. The question as to what extent endocrine glands may play a primary role or to what extent they are only executive organs of the total plasm function cannot be definitely answered at this time.

In addition to the physical orgone therapy, I treated the patient psychiatrically. Very soon, the patient began asking a series of questions: "Does sexual intercourse hurt?" "When are you going to rape me?" (Like so many other chronically abstinent people, this patient suffered from intense rape phantasies. She was convinced that a woman could not stay alone in a room with a man without being raped). "Does the man move the penis in the vagina? Wouldn't that hurt?" "What does one do when one gets too many children?" (She knew nothing about contraception). "Does a woman have to give in to a man if he wants satisfaction? I dread it." The patient was ignorant with regard to the most primitive questions of sex life. As a child she had kept asking her mother questions but had been rebuffed, had stopped asking anybody such questions and now believed that one was not supposed to know "such things." She had developed a strong fixation to her father. He was a strict authoritarian disciplinarian and moralist who had immediately suppressed the first adolescent impulses in the girl. Soon after that, she had developed perverse phantasies which made her suffer a great deal. The main content of these phantasies was brutal violation. This led to panicky fear whenever a boy came near her. Even then, at puberty, this anxiety was accompanied by spasms of the genital apparatus. Later on, they became a chronic complaint. More and more, she avoided men and became increasingly lonely.

She had absorbed the usual distorted concepts of sexuality and had anchored them characterologically: Sex is evil, a terrible sin against God. One has sexual intercourse only in marriage, and even then only in order to have children. (Of course, everything she saw all around her contradicted this). The man violates girls in order to "still his lust." Women have no sexual desires, they only bear children. They haxe sexual intercourse only because the man "needs that sort of thing." If one masturbates, one becomes a cripple, an idiot. (Therefore, she never really masturbated, only always kept her hand at the genital at night, in a stereotyped manner). Man is different from the animals in that he is not sexual. Everything sexual is animal-like and has to be fought. One must cultivate "higher values" and must not have "bad thoughts."

Of course, she did have "bad thoughts," felt guilty about them, tried to repress them, and developed "worse" thoughts. Even as a child she developed brutal sadistic phantasies which scared her, so that she tried to suppress them. She had impulses to bite men's penises off or to tear them off. At puberty, when she was about to dance with a boy, the impulse to choke him would break through into her consciousness. This made her withdraw still more. Her father warned her against venereal diseases, making her believe that sexual intercourse would inevitably result in venereal disease. He did not mention how one could protect oneself against it. Thus she was, helpless, left to her own devices, torn between longing for love and fear of it. This led her into dangerous situations. Her curiosity made her approach completely strange men and indulge in various sexual practices only to flee in a panic and withdraw completely for months at a time. That it was her anxiety which led her into dangerous situations is easily understandable. She had the urge to find out whether what she had been told was true. This anxiety was an expression of her urge for sexual gratification. This only confirms what sex-economy has always contended: *Compulsive morality and abstinence create the exact opposite of what they are intended to create: they create sexual criminality and perversions.*

She did not know the anatomy of her genital. Since her genital made her suffer so much, the thought of how it was built and how it worked was with her almost constantly. It would come to her during perfectly harmless conversations with male or female acquaintances. And so she had again to take flight and withdraw. Only once, at the age of 20, had she felt more deeply for a boy and attempted to break through. But she soon gave up. She "went to pieces." The genital excitation became so intense, and the genital spasm became momentarily so violent that she wanted to commit suicide. She could not conceive of the sexual act as other than a brutal violation.

As early as puberty, her tremendous sexual stasis impaired her working capacity. Whenever she became interested in her work, compulsive sexual thoughts would intrude. Apparently, the emotional stimulus of the work simultaneously stirred up the dread

sexual excitation. *Sexual stasis is the most important cause of work disturbances in puberty.* As time went on, her working capacity kept decreasing, until the patient reached a stage of complete emotional emptiness. During the past two years or so, the emotional emptiness had developed into somatic shrinking.

In these first attempts to treat a shrinking biopathy, I started out from the following premises: Carcinomatous shrinking as well as the cardiovascular biopathy, the "stasis neurosis," are based on sexual stasis.[4] Nevertheless, there must be an essential difference between the carcinomatous and the cardiovascular biopathy. Cancer characters show predominantly mild emotions and characterological resignation. Hypertensives, on the other hand, people who suffer from chronic vascular contraction, are "emotionally labile," more or less explosive, characters. This is expressed in their acute anxiety attacks; on the other hand, I have never seen cancer patients with violent emotions, explosions of anger, etc. In spite of their common basis, sexual stasis, these two biopathies show essential differences. The decisive factor here is *how the organism reacts to the sexual stasis* once it has come about.

In exploring new connections, we are again and again forced to make certain assumptions which the disease pictures impress on us, without being able to say with certainty that these assumptions are correct. We have to leave it to further experiences to confirm or refute our assumption. The clinical comparison of cancer biopathy and cardiovascular hypertension necessitated the assumption of a basically different energy process in the two:

In the cardiovascular biopathy (stasis neuroses due to abstinence) *the sexual excitation remains alive,* biologically, physiologically and emotionally. That is, the biological core of the organism, the autonomic vital apparatus, continues to produce energy to the fullest extent. The organism, in its state of contraction, reacts to this with outbreaks of anxiety or anger and with somatic symptoms such as hyperthyroidism, diarrhea, tachycardia, etc.

In cancer, on the other hand, the biological core reduces its

[4] Cancer and cardiovascular disease are the most frequent causes of death. *Cf.* Chapter X.

energy production. Thus, as time goes on, the excitations and emotions become weaker and weaker. Here, the energy household is disturbed far more severely than in such neuroses as hysteria, in spite of the much more conspicuous symptoms of the latter. Functionally speaking, an eruption of anxiety or anger is still a *discharge* of energy, pathological as it may be. *Chronic emotional calm, on the other hand, must correspond to a depletion of energy in the cell and plasma system.*

Though with some hesitation, I cannot help speaking here of *"suffocation of the cell energy system."* Character resignation must correspond to a gradual cessation of the energy functions of the vital apparatus. I would like to illustrate by an analogy:

In a running brook, the water changes constantly. This makes possible the so-called self-purification of the water; dirt is soon dissolved—a process which is as yet not understood. In *stagnant* water, on the other hand, processes of putrefaction are not only not eliminated, but furthered. Amebae and other protozoa grow poorly or not at all in running water, but copiously in stagnant water. We still do not know what this "suffocation" in stagnant water, or in the stagnant energy system of the organism, consists in; but we have every reason to assume the existence of such a process. It can be no accident that cancer cells develop so readily in organisms in which the energy no longer flows freely. Apparently, the cancer biopathy—in contradistinction to other biopathies—begins with this calm in sexual and emotional life. While the previous history of cancer patients frequently shows numerous symptoms of stasis anxiety, they are very rare in the *mature*, or cancer stage. There seems to be a sharp reduction of the *biological energy metabolism* which in the healthy person is so vividly reflected in the function of the orgasm. These assumptions seem very important and deserve thorough investigation.

It should not be assumed that the organism accepts the gradual extinction of the energy system without a fight. At a time when the orgonotic excitation of the total system decreases, the excitation may still be intense in individual cells or cell systems, just as a suffocating organism defends itself against the final relaxation by clonisms. That is, even at a time when the *total* organism has lost

its capacity for excitation and for energy metabolism, *individual cells may still show orgonotic over-excitation*. It goes without saying that such isolated excitations, which no longer take place in connection with the excitations of the total organism, can no longer be physiologically normal. They must exert a harmful influence on the cell *structure*.

I shall interrupt this discussion here in order to go back to our patient. At any rate, orgone physics promises to provide important insights into the affective function of the cells and its relation to orgone energy metabolism. For example, the orgonotic lumination of bions reveals important connections with the phenomena of cell lumination and cell excitation in the organism.

The affective and energy behavior of our patient fully corresponded to the assumptions just described. She kept asking about sexual matters, but there was no urge or excitation behind the questions. A patient with anxiety hysteria, for example, would have asked the same questions with the greatest excitation, or she would have repressed them and developed anxiety; the *emotional* significance of the questions would have been immediately evident. Not so in our patient. Everything she said or asked about was *flat*, as if devoid of interest, in spite of the fact that these things filled her life. Her phantasies were cruel, but she herself seemed untouched by them and superficial. Soon she began to complain herself about this superficiality, about the "corpse-like" quality of her way of experiencing things. She felt that she was unable to establish genuine contact with anything or anybody. This emotional calm of the cancer character is entirely different from the coldness and contactlessness of the compulsive characters; in the latter, strong energy impulses are inhibited by the emotional block, while in the former the energy is simply lacking.

Precise observation of the patient's behavior contradicted the assumption that there were repressed affects in the biological depth. Not only were there no affects on the surface; *there were no affects in the depth either*. The break-through to the orgasm reflex succeeded with surprising ease; but again, there was hardly any affect connected with it. *Affects are the expression of biological cell excitation*. If, in the case of a patient with stasis neurosis

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and anxiety, one breaks through the respiratory inhibition, strong excitations inevitably and immediately appear. But this was by no means the case in our patient. Though the correction of her respiration over a period of two months resulted in spontaneous vegetative movements, it produced no strong affects. While the stasis-neurotic patient develops an intense fear of the orgasm reflex, our patient was not afraid of it because there was so little energy behind it. In other words, the affective debility reached far down into the biological system.

I was confronted by the question whether it would be possible to dissolve spasms of the genital apparatus in the absence of strong excitations. For it was clear that she could get well only if her sexuality would begin to function strongly. After only two weeks, she began to develop plasmatic currents in the genital, though they were weak. With that, the genital spasms became milder and the pain disappeared. But the excitation was so weak that the patient did not develop the usual fear, and the excitation failed to increase. This was an extraordinary finding, and in contrast to the usual observations in neuroses. It confirmed the assumption that in the shrinking biopathy the sources of excitation in the autonomic vital system gradually become extinguished. The extent to which dwindling energy functions can again be revived by orgone therapy remains to be investigated.

Resignation without open or latent protest against the frustration of happy functioning, then, must be regarded as one of the essential causes of the shrinking biopathy. *The biopathic shrinking is the continuation, in the realm of cell functioning, of chronic characterological resignation.*

Let us think of the biological, physiological and psychological functions in terms of a wide circle with a center ("core"). The shrinking of the circle periphery then would correspond to the characterological and emotional resignation. The center, the core, is as yet untouched. But the process progresses toward the center, the "biological core." This biological core is nothing but the sum total of all plasmatic cell functions. When the shrinking process reaches this core, then *the plasma itself begins to shrink.* This coincides with the process of weight loss. But long before the plasma

function is directly disturbed, the peripheral physiological and character functions are disturbed: first the ability to establish social contact, to enjoy life and pleasure, the ability to work, and then plasmatic excitation and pulsation.

The vital apparatus works in layers around the biological core; the biosystem consists of superficial and deeper layers. Such a layering was first found in the character.[5] Correspondingly, there are superficial and deep disturbances of bodily functioning. An *acute* respiratory disturbance will not affect the biosystem. A *chronic* respiratory disturbance, in the form of a chronic inspiratory attitude, will create chronic anxiety; but it will not affect the biological cell plasma function as long as the energy functions of the cells continue, that is, as long as the organism continues to produce strong impulses. When, however, the peripheral character resignation has progressed to the biological core, when, thus *the production of impulses in the cells itself is affected,* we are dealing with the process of biopathic shrinking. This process will have to be further investigated in schizophrenia, especially the hebephrenic form.

That this process is specific in cancer is now an established fact. The real carcinomatous process is essentially like the protozoal life in a pool where there is no movement of water but ample growth of protozoa. Unfortunately, these processes in cancer can only be deduced and not directly observed microscopically. Thus there is a gap without *immediate* observation between characterological and biological affective debility and that carcinomatous process in the cell plasma which—in the form of vesicular, bionous disintegration—we can observe microscopically.

We shall now turn to these pathological processes in the cells and the tissues. In so doing, we shall remember an important fact which is overlooked by mechanistic cancer research: No simple scar, wart, injury or chronic irritation can lead to cancer *unless* there are already present basic disturbances of vital functioning in the core of the biological system which then, secondarily, take hold of the local injury. The question is: *how does this take place?*

[5] *Cf.* Wilhelm Reich, CHARACTER-ANALYSIS, Orgone Institute Press, 1945.

Chapter VI

THE CANCER CELL

1. The Riddle of the Development of the Cancer Cell

Among the many unsolved problems presented by the cancer scourge hardly any has excited as much curiosity, among physicians and laymen alike, as the question of the origin of the cancer cell. Healthy tissue is "at rest," that is, the individual cells live together in harmony and collectively fulfill the functions of the respective organs, such as taking up food, digestion, excretion, respiration, sexual excitation and gratification, etc. In brief, the cells are subordinated to the organ functions; they function in the sense of guaranteeing the vital functions of the total organism. Cancer tissue develops from *seemingly* healthy tissues. Its chief characteristic—according to traditional concepts—is this: one or more cells which were at rest begin to get "restless"; they divide rapidly, become rampant and grow into large heaps, thus forming the "cancer tumor." In contrast to healthy tissue cells, cancer cells are mobile. Dividing rapidly, they grow into the surrounding tissues, thus destroying them. They are rightly called "infiltrating" and "destructive." Let us concentrate first on the one all-important question: *How is it possible that an immobile cell, living and functioning properly within the tissue, changes into a mobile, "wild" cell which leaves the tissue and destroys everything it meets in its path?* That this happens is all the more remarkable in that the cancer cell itself has a low vitality, that is, it disintegrates very readily.

Up to now, the jump from the healthy cell to the cancer cell has remained a riddle. The characteristics of the healthy cell are very well known. The forms and many characteristics of the cancer cell are also fairly well known. *But one knows nothing about what happens in between the two, nothing about how one is transformed into the other.*

About ten years ago, bion research, by way of a rather peculiar detour, succeeded in solving this riddle. The solution of this one most important riddle opened many avenues of approach to an understanding of cancer as well as to the fight against it. The most important finding was this: *The belief that the cancer cell develops directly out of healthy cells is erroneous.* Long before the development of the first cancer cell in the organism, there are a series of pathological processes in the respective tissue and its immediate surroundings. These local processes, in turn, are induced by a general disease of the vital apparatus. Thus the development of a cancer cell in a certain spot is in reality only *one* phase in the development of that general disease which is called "cancer." This general systemic disease we term *carcinomatous shrinking biopathy.* The cancer tumor is not even the most important part of the cancer disease. It is only the most striking one and up to now has been the only palpable finding in cancer biopathy. The discovery of the shrinking biopathy is so important because it turned our attention to that which is essential. If, as we know now, the general disease, and not the local tumor, is the essential thing, then, logically, the treatment of cancer must also be a *general* one; it cannot be restricted to the small spot in the organism where a tumor happens to make its appearance. The ignorance of the *general* disease "cancer," and the erroneous belief that the local tumor is the actual disease, is the reason why the fight against cancer has made no progress.

Let us return to the question of what takes place in the tissue *previous to* the development of the first fully developed cancer cell. In order to answer this question, we must first get rid of some methods which have *handicapped* cancer research, and learn some new ones:

a) We make it a habit to examine healthy and cancer-suspect tissues in the *living* state, not, as is customary, in the *dead* state, fixed and stained. The fixed stain preparation may serve as control. But the living preparation shows findings which never could be made in the dead preparation.

b) We make our observations with a magnification of at least 2000x. This is essential, because otherwise the observations which

alone will explain the development of the cancer cell cannot be made.

c) We often repeat and practice our observations in excreta (sputum, feces, urine), living blood, skin cells, in short, all available cells of the organism.

a) Unusual forms in cancer tissue and blood of cancer patients.

In healthy living tissue and in healthy blood, examined at 2000x, we find exclusively such cells as are described in the literature as the normal constituents of the organism. Now let us examine blood, excreta and tissues of a cancer patient, say with carcinoma of the lung. We find formed cells and unformed shapes such as we never see in healthy experimental animals or in the tissues or sputum of healthy humans. In particular, we find *striated* or *vesicular* structures with a strong *blue glimmer* which look neither like cells nor like bacteria. Some have irregular outlines, as if not formed at all, while others show an elongated, *club-like* or *caudate* shape. We are surprised to find in the sputum what look like caudate, quickly moving and pulsating amebae. *How do ameboid forms get into the lung?* Certainly not through "air infection," for there are no amebae in the air. *They must have developed in the lung itself.* Out of what? Certainly not from germs which happened to have entered the lung. We have learned that in grass infusions amebae develop from vesicularly disintegrating grass through various intermediate stages, and that there are no "germs" in the sense of traditional protozoology. Could it be that the amebae and similar forms developed from disintegrating lung tissue, just as the amebae in grass infusions develop from the disintegrating grass tissue? This is an arresting idea for it explains at one stroke the origin of cancer cells. However, one should hold on to such ideas and make definite statements only after having assembled all the necessary objective proofs for their correctness.

We have misgivings with regard to our idea: Why has it never occurred to anybody simply to examine the sputum of patients suffering from or suspect of cancer for unusual formations? Undoubtedly, they would have found the presence of amebae in the

lungs. If things are that simple, caution is doubly indicated. Let us first examine the literature on cancer. In no comprehensive work on cancer is there as much as a mention of the existence, let alone the form or variety of *living*, mobile cancer cells in living tissues or in excretions. It is almost inconceivable that several generations of cancer researchers should have so grievously erred. So, either our idea is nonsense and the amebae in the sputum have nothing to do with cancer, or—generations of cancer researchers have in fact made a tremendous error.

Let us not gloat over this, but look seriously at all sides of the question. First, do such errors, of commission or omission, occur in science? Undoubtedly they do; more than that, they always precede important new discoveries. Incalculable numbers of women died of puerperal fever at a time when, before Pasteur and Lister, one knew nothing about infection and sterilization. It would have been very simple indeed to develop an old discovery of Leeuwenhoek and to look into microscopes. What kept the physicians of Pasteur's time from using microscopes was nothing but an old, well-established prejudice; it resulted in incalculable deaths. Today every physician or educator is familiar with infantile sexual activities. Yet, before Freud discovered them, they did not exist in the eyes of science. How simple it is today to realize that the chief interest of children is the sexual one.

Considering these examples from the history of science, which could be infinitely extended, we become less hesitant in assuming that a similar catastrophic error has been made by the cancer researchers. But we have to find out just what this error consists in, how it came about; and on the other hand, we must positively prove our concept to be correct. Having come upon the possibility of a gigantic error, we have to face the issue. Either our concept is wrong; then we must admit it. Or traditional cancer research started out from erroneous premises and got on the wrong track; then we have to prove that. To state it right here: *Traditional cancer research does, in fact, start out from erroneous premises and proceeds on the wrong track.*

It is easy to see what a consistent study of the excretions and the blood of cancer patients would mean: It would soon become

possible to make an *early* diagnosis of cancer. One would no longer have to wait until the cancer tumor has reached such proportions that the diagnosis by Xray or biopsy becomes possible. In addition, one would gain an insight into the origin of cancer and find ways of curing it.

To prove the basic error of traditional cancer research is the same thing as to prove the correctness of our concept concerning the origin of cancer cells. If we can understand how the cancer cell develops *from healthy tissue* we can also understand where traditional cancer research failed.

Let us examine the sputum of a patient with lung cancer at magnifications above 2000x, say, 3000x or 4000x. We find a wealth of very small *lancet-shaped bodies* which we did not see below 2000x. They have the same shape and motility as the T-bacilli which we can cultivate from degenerating tissue or blood, or from putrescent protein. They are the same bodies which we find in charcoal bion preparations or in cultures made from any kind of cancer tissue.

Since T-bacilli are the result of tissue degeneration and putrid disintegration, the conclusion is inevitable that a process of disintegration and putrefaction is taking place in the lung tissue. We have to decide the question as to whether these T-bacilli are a *result* or one of the *causes* of the tissue disintegration. One thing is certain: They did not enter the lung from the air. This is easy to prove. For no matter how we try, *none of the known culture media can be infected with T-bacilli from the air.* Only when the cultivated air bacteria (rot bacteria, subtilis, staphylococci, etc.) themselves degenerate, do we obtain T-bacilli. They are easily recognized in the culture. They form a narrow, green-blue margin around the degenerating culture. There is a strong acid and ammonia-like odor. From this margin, pure cultures of T-bacilli can be obtained. The question as to whether the T-bacilli precede the cancer or are a result of it, or both, can be answered experimentally. More about this later.

In the sputum of the lung cancer patient, we also find blue, contractile forms of diverse shapes which are absent in healthy lung tissue. They are PA *bions*. They, too, must have developed in the

lung. Like the T-bacilli, they cannot be cultivated from the air. We know that they are PA bions because they have the same paralyzing effect on the T-bacilli as the experimental PA bions from earth or coal. A new question arises: *What is the connection between these large blue bions and cancer?* The longer and the more exactly we observe, the more complicated things become. Nevertheless, the answer will prove simple.

b) Autoinfection of the organism due to tissue disintegration.

The formations found in the sputum derive from the organism itself. We have to find out how they develop. They are the product of a tissue degeneration, of an *autoinfection* of the organism. To make sure, we examine other excretions in cancer patients: urine, feces; secretions from vagina and uterus; epithelium from skin cancers; tissue from spontaneous cancer tumor in mice. The more cancer tissues of diverse origin we examine, the more certain become our conclusions:

a) The fully developed cancer cell is only the final phase of a long series of pathological tissue changes which hitherto have remained unexplored;

b) There are a number of typical phases of tissue disintegration and of the development of certain forms which are not to be found in healthy tissues;

c) The first phase of carcinomatous tissue degeneration is the loss of normal structure through the formation of vesicles;

d) The vesicular disintegration of the tissue results in two basic types of bions: the blue PA bions and the black T-bacilli;

e) *From these bionous energy vesicles there develop cancer cells, through many intermediate phases to the mobile, ameboid protozoon.*

Whatever cancer tissue we examine, we always find the same forms of departure and transition. (*Cf.* fig. 38, p. 398.)

Healthy muscle tissue shows a regular striated structure without vesicles. Cancerous muscle tissue shows a vesicular structure (*cf.* figs. 14 and 15, p. 377). Healthy living cells show a bluish protoplasma without structure or with fine striation. The same cells in cancer tissue show deep-blue bionous vesicles or tiny black bodies.

Healthy cells disintegrate, when boiled in KCl, into large blue bions. Cancer cells, when boiled, disintegrate into T-bodies. The cancer cell, then, differs from normal tissue cells in that it disintegrates not into blue PA bions but into T-bacilli.

No matter from what part of the body the cancer tissue comes or what particular kind of cancer it is (sarcoma, adenocarcinoma, epithelioma, etc.), cancer is characterized by the *vesicular structure of the surrounding tissue* and the various forms which develop into a fully-developed cancer cell or result from the disintegration of the latter. The first step in the development of a tumor is always vesicular tissue disintegration. This justifies the assumption that the infiltrating growth of cancer cells into the surrounding tissue is due not only to already developed cancer cells, but also, even to a higher degree, to a disintegration of the softened tissue in the surroundings. The surrounding healthy tissue must undergo vesicular disintegration before the infiltrating growth of the cancer cells becomes possible. It is a matter of a mutual interaction between already formed cancer tissue and surrounding healthy tissue. The first vesicularly disintegrated cell group develops into cancer cell tissue. This in turn damages the surrounding tissue and causes its vesicular disintegration. This tissue, in its state of vesicular disintegration, no longer offers any considerable resistance to the cancerous growth and itself increasingly develops into cancer tissue. This is the explanation of the typical destructive and infiltrating growth of the cancer tumor. The microphotos of unstained living cancer tissue (*cf.* fig. 16, p. 378) show the gradual transition into dark cancer formations.

The shape of fully-developed cancer cells is typical for all forms of cancer, no matter whether they are found in a bone, a gland or a muscle (*cf.* fig. 21, p. 381). Once one has seen it, one easily recognizes it by its club-like, caudate form. It takes on this shape long before it attains motility. If one finds, in a vaginal secretion for example, elongated, vesicular formations of a club-like shape, with a strong blue glimmer, the diagnosis of incipient cancer is beyond doubt. There is, at this stage, no telling whether or not the disease is going to progress. This depends on many circumstances, which will be discussed below.

These club-shaped bodies cannot be confused with any healthy cell. Only the gastric secretions contain cylindrical cells from the gastric mucosa which on casual observation one might take for cancer cells. The somewhat experienced observer, however, will not confuse the two. Besides these typical club-shaped bodies one finds large round cells the plasma of which shows no structure or is composed of bions of intense dark blue color.

The typical stages of the development of cancer cells, as observed in mice and humans, are as follows:

a) Vesicular disintegration of the tissue. This disintegration is caused by a local spasm and chronic general energy stasis;

b) Organization of the bionous vesicles into heaps ("bion heap");

c) Formation of a membrane around the bion heap;

d) Dissolution of the bions into structureless or striated blue plasma. (This does not always take place; the bions may keep their original form);

e) Formation of club-shaped cells;

f) Development of motility in the fully developed club-shaped cells. The movements cannot be seen at a magnification of less than 3-4000x. They are slow and jerky, from place to place;

g) Liquefaction of the plasm and with that development of flowing ameboid protozoa. In human cancer, the development very rarely proceeds to this point, because usually death occurs before this stage is reached. In mice, especially mice which have developed artificial cancer as a result of T-bacilli injections, these ameboid forms are seen much more frequently. The cancer cells move by way of rhythmic contractions or by flowing from place to place. Many cancer cells have a tail and move in the manner of fish. (This was recorded on movie film). The fully-developed cancer cells show an infinite variety of form. For reasons as yet unintelligible, the small cells are much more malignant than the large ones. The most malignant form is the small-cell sarcoma in youth.

The development of a cancer tumor, then, corresponds to a *protozoal self-disintegration and autoinfection of the organism.* To put it differently: *Individual tissues of the metazoal organism*

develop into protozoa of different size and shape. If this process were not stopped by early death, the cancer mouse or the cancer patient would change completely into protozoa. The fatal accompaniment of this metamorphosis of tissues into protozoa is the typical cancerous process of putrefaction. This putrefaction of the organs and the blood will have to be discussed separately. In bion research, it makes little difference whether the cancer cells develop from epithelial tissue, gland tissue, connective tissue or bone; the basic process is always the same. Thus, the usual differentiation of cancer forms (epithelioma, adenocarcinoma, glioma, etc.) loses much of its significance.

c) The function of the orgasm in the energy metabolism of the cell.

The biopathic shrinking process must of necessity affect the process of local tumor formation. Orgone-therapeutic observations show *local spasms* and *disturbances in the biological charge* of the tissues to be the most immediate basis of tumor development. The *respiratory inhibition*, on the other hand, forms the basis for the general shrinking of the organism. These processes explain the disturbances in the total organism and in the individual organs, but they do not explain the disturbances of the *cell* functions in the affected organs. In a rather devious way, this problem led back to the old question: *What is the function of the sexual orgasm in the energy metabolism of the cell? Why has the metazoon developed this cardinal function, and on what biophysical processes in the cells is it based?* Such questions may seem superfluous or naive. Yet, they are of decisive significance.

Sexological research before sex-economy did not even raise this question, and sex-economic research thus far has been unable to answer it. We cannot retreat to the convenient mystical standpoint that man differs from the animals by being "asexual" or that "one can exist without the orgastic function." The damages to humanity caused by orgastic impotence are too widespread and too disastrous to be overlooked any longer. Sex-economy has long known the fact that the orgasm determines the energy equilibrium

of the organism, without, however, understanding this fact. We only knew that the orgasm regulates the energy household and that orgastic impotence causes biopathies. But we did not know *how* the orgasm fulfills this function, or, in other words, what causes the orgastic (orgonotic) discharge *in the cells*. Sex-economic cancer research unexpectedly led to the solution of this important question:

The local cancer tumor develops in spastic and poorly charged, that is, in suffocating tissues. This process must have a pronounced effect on the individual cells. Chemical investigations have provided many important findings here, such as the production of lactic acid in cancer tissue, the excess of carbon dioxide which points to a process of suffocation, etc. Bion research adds to the chemical viewpoint the energy viewpoint, in other words, that of orgone physics. It shows that energy stasis leads to a bionous disintegration of the cell substance, and that the cancer cell develops secondarily from the resulting bions. Thus we have to investigate the question: In what manner does energy stasis in a tissue lead to a bionous disintegration *of the cells?*

Every cell, with its nucleus, plasm and orgone energy field, forms a tiny but complete "orgonotic system." As every cell contains orgone energy, its structure must be correlated to its orgone charge. It is not difficult to see what this correlation is: The *nucleus* is the most important part of the cell and the one containing the largest amount of energy. Plasm without a nucleus is not viable; on the other hand, cells can live with a minimal amount of plasm, as, e.g., the male sperm cells. The nucleus is the "biophysical center" of the individual cell, just as the autonomic nervous system forms the "biological core" or "center" of the total organism. The nucleus and the autonomic nervous system are the parts richest in energy in their orgonotic systems, cell and total organism, respectively.

The nucleus is, energetically speaking, more vigorous than the cell plasm. All essential biological processes and functions originate in the nucleus. Thus, cell division begins with the division of the nucleus which is then followed by the division of the plasm.

Amebae in the process of dividing often live for hours with a divided nucleus, that is, two nuclei, before the body is divided into two amebae.

The German biologist, Richard Hertwig, was the first to investigate and formulate the relationship between nucleus and plasm in his now famous "*nucleus-plasma-relation.*"[1] It had been known for a long time that most cells, at the time of division, show a certain size which varies only within very narrow limits. *After* division, the daughter cell grows to the size which the parent cell showed immediately *before* division. Classical biology considers a normal nucleus-plasma-relation that relation which the cell shows immediately *after* division. According to Popoff, a young daughter cell grows evenly up to the time of division. Until that time, the nucleus grows relatively less rapidly than the plasm. Only then does the nucleus suddenly begin to grow ("growth of division"), so that immediately preceding the division, it attains, like the plasm, about double its previous size. This means that after division—when the growth of the nucleus lags behind that of the plasm—the nucleus-plasma-relation is shifted to the advantage of the plasm: there is more plasm than nucleus. This creates a tension in the cell which makes the nucleus grow and re-establish the normal nucleus-plasma-relation. Hertwig assumed that it is this tension which not only causes the growth of the nucleus but also initiates the division.

On the basis of our orgasm formula, we can add: *Just previous to division, the cell is mechanically tauter and more highly biologically charged than after division when it is smaller.*[2] The nucleus-plasma-relation previous to division is shifted to the advantage of the nucleus because the nucleus is orgonotically stronger than the plasm. The relation of the *mass* of nucleus to mass of plasm remaining the same, the *orgonotic* relation must shift considerably to the advantage of the nucleus. The high relative tension and charge of the nucleus then causes division. As we know, the process of division follows the formula of tension and charge and leads to a *discharge* in the process of division and

[1] *Cf.* Hartmann, ALLGEMEINE BIOLOGIE, 2nd ed., 1933, p. 364ff.
[2] *Cf.* The FUNCTION OF THE ORGASM, *1st ed.*, p. 253ff., *2nd ed.*, p. 222ff.

to a *relaxation* in the daughter cells. We now have to see what all this has to do with the problem of the cancer cell.

In the dead, stained tissue section, cancer cells are diagnosed from the following characteristics: The nuclei are arranged in an irregular manner; there are numerous "mitoses" (divisions of nuclei); the nuclei are extremely rich in chromatin, large and close together; the nuclear substance seems to outweigh the plasm substance. If we try to coordinate this finding with the orgone physics of cancer cell formation, the next question is:

Can Hertwig's nucleus-plasma-relation be expressed in terms of orgone biophysics? The answer is Yes. The nucleus is the orgonotically stronger system of the cell, the plasm the weaker system. There is a difference between the orgone charge of the nucleus and that of the plasm. This is evident from microscopic examination. The nucleus shows all the orgonotic characteristics to a higher degree than the plasm; it has a stronger radiation and bluish coloration. Around the cell there is an *orgone energy field;* this is the orgone-weakest part of the "total orgonotic system" of the cell. It is a basic law of orgone physics (contrary to electrophysics and mechanics) that *the stronger orgonotic system withdraws energy from the weaker system and attracts it.* This fact is of utmost significance and throws light on important, hitherto unsolved questions. For example:

a) What holds the cell together?

b) How is it possible that—apart from the period of division—the nucleus-plasma-relation remains practically the same, that, in other words, the nucleus is always stronger in orgone energy than the plasm? Since every organism constantly radiates orgone, why does it not gradually lose its orgone charge completely?

The answer is as follows: The nucleus is the functional energy center and the energy source of the cell, its "autonomic nervous system," as it were. The plasm is the reservoir of the food and the executive organ of the impulses from the nucleus, as the organs of digestion and locomotion in the metazoon are the executive organs of the autonomic apparatus. *The nucleus constantly withdraws orgone energy from the cell plasm,* energy which is brought to the cell by way of nutrition and respiration. In this way, the

nucleus maintains an orgone charge higher than that of the plasm. The nucleus-plasma-relation has to be evaluated not only from the point of view of matter, but also from that of energy. When the plasm grows in the interim between the two cell divisions, orgonotic matter is accumulated in the plasm; at a definite point, the nucleus grows rapidly, thus changing the relation in charge.

Thus we find that during the phase *between* two cell divisions (two orgonotic convulsions) *the cell constantly takes up much more orgone than it discharges.* This—and not chemical material processes—determines the growth of the total cell up to the time of the next division. This preponderance of the energy flow in the direction outside→nucleus necessarily leads to an *orgone excess* and with that to a reversal of the direction, namely, *nucleus→outside. The discharge of an excess in biological energy, however, takes place*—in the whole animal and plant world, in the protozoon as well as the metazoon—*through a convulsion of the total plasma, in other words, the orgasm.* Thus, the statement that the orgasm is a basic cell function, the *"regulator of the energy household of the organism,"* is not based on speculation, but on orgone-physical facts. The sexual orgasm of the metazoon as well as the individual cell division takes place according to the four-beat: tension→charge→discharge→relaxation. The "orgasm formula," then, is identical with the "life formula": cell division is an orgastic process in the strict sense of *equalization of excessive biological energy.* The orgasm is not a caprice of nature, not a burdensome function as seen by unsatisfied and biologically rigid (orgastically impotent) individuals; it is the regulator of the household of biological energy. *The orgasm discharges the excess of orgone energy which periodically accumulates in the cell nuclei.*

Thus the study of the mysteries of the cell functions provides strong support for our orgasm theory. On the other hand, it is capable of explaining cell functions which have hitherto remained incomprehensible: The orgasm (orgone discharge by way of convulsions) is the counterpart of the accumulation of orgone which takes place in any process of growth. When the process of growth comes to a standstill, that is, when the production of orgone energy *excesses* in the biological nucleus gradually ceases,

the orgasm also gradually loses its significance. It diminishes, becomes less frequent, and finally disappears altogether. This, however, is the main characteristic of normal aging, that is, involution of the organism. For this reason, the ascending part of life is strong in sexuality, and the descending part weak. This is true of individuals as well as generations. There are periods of flourishing and periods of dying in cell generations. Much remains obscure here. Let us go back to the energy processes in the cancer cell formation.

I would like to compare the precancerous cell suffocation with an analogy from human living. Let us imagine a group of people under favorable conditions. Each individual has sufficient space to move in. The individuals cooperate with each other, help each other, are free from anxiety, and function fully in every respect. But let us assume that the same group of people is confined to a small space, and that, in addition, a fire breaks out. There is panic. This panic is nothing but a revolt of the life impulses against the threat of extinction. There is no more order; only disorderly reactions. People are being trampled on. The panicky fear has not only done away with all orderly functioning but has given rise to a new way of functioning, that of panic, which is deadly. This process is analogous to that of the development of wild cancer cells in suffocating tissue.

The chronic contraction of the organism prevents normal respiration and normal charge and discharge of orgone energy in the cell plasm. At first it contracts, then it begins to shrink. The chemical processes of metabolism are disturbed. The excess of carbon dioxide causes a condition similar to that of suffocation in a metazoon. In suffocation, the autonomic system reacts to the threatening extinction by violent convulsions, that is, disordered hyperactivity.

It is logical to assume that the nuclei develop such an overexcitation and disordered activity when the functioning of the plasm is reduced and the plasm itself begins to shrink. As has been pointed out so many times, the total organism as well as the individual cell are governed by the same basic laws. Normally, the

nucleus forms a functional unit with the plasm. In the process of suffocation in the plasm, the nucleus behaves quite differently from the plasm. The nucleus, being the stronger orgonotic system, is still capable of "fighting" while the plasm, the orgonotically weaker system, has already given in. Thus, the nucleus-plasma-relation shifts rapidly and dangerously in favor of the nucleus: the energy excess in the nucleus as compared with the suffocating plasm is out of all proportion. The nucleus, in a condition of excessive charge, has only one way of reacting: *lumination and division.* While in the process of shrinking the biological orgone radiation of the plasm and blood systems decrease, the mitogenetic radiation of the nuclei which are threatened with suffocation increases enormously. Klenitzky, for example, found this to be the case in carcinoma of the uterus; Gurwitsch found increased radiation in tumor pulp. *The nuclei try to make up for the failure of the total organism:* they take over the function of energy *discharge,* a function which the total organism, due to orgastic impotence and the contraction of the plasm system, is no longer able to fulfill. *The natural orgastic convulsions of the total plasm system are replaced by an energy discharge on the deepest biological level in the form of nuclear lumination and division.*

This explains, in a simple way, the great number of cell divisions ("mitoses") in cancer tissue. Since these divisions can no longer take place in the normal manner, the nuclei are of various sizes. Due to the disturbed plasm function, the formation of the nucleus is also disturbed: it disintegrates into individual bions which show a strong radiation. This bionous disintegration of the nucleus extends to the whole cell and even beyond it, to neighboring cells, and leads to the reduction of the cells into a formless heap of bionous vesicles; in the dead stain preparation these appear as dense, massed nuclei and as "chromophilia." From this bion heap the protozoa which are called "cancer cells" develop; they do this with the help of the orgone energy which no longer functions in harmony with the total organism. The metazoon ceases to function and the protozoon begins to flourish, as in a pool of stagnant water where there is no longer an energy metabolism. *Life reverts to the lowest biological level.* Where a metazoal

organism can no longer exist, a protozoon, and certainly a bion, can still function.

The cancer tumor, then, is the ultimate expression of a severe disturbance of the orgonotic equilibrium and of the unitary functioning of the organism, on the basis of orgastic impotence. It results from a rebellion of the affected nuclei against the processes of suffocation and shrinking in the plasm. This is what causes the "wild cell growth." This process in the cells is analogous to the disturbance of the autonomic system in an acute anxiety attack, as for example in anxiety neurosis. We are fully justified in speaking of an *anxiety attack in the nuclei of suffocating tissue.* In anxiety neurosis, the anxiety attack comprises the biological core *and* the biological periphery. In cancer, the anxiety attack takes place in the cell nuclei alone, while there is emotional calm in the periphery. In anxiety neurosis, the anxiety takes hold of the total organism. In local cancer tumor formation, the anxiety attack is restricted to a tissue, and even there only to the nuclei. In anxiety neurosis, the whole organism is fully active. In local tumor formation, the anxiety attack is restricted to a tissue, and even there only to the nuclei. In anxiety neurosis, the whole organism is fully active. In local tumor formation, the total organism is in the process of dying off; only the nuclei have remained strong and capable of developing anxiety. The mechanism of the biopathies which result from sexual stasis, then, is in the last analysis a pathological cell mechanism.

The local process is a result of the general shrinking biopathy of the organism. The shrinking process itself takes place in three typical phases:

1. *Phase of contraction.* This begins with a chronic incapacity of vagotonic expansion which expresses itself characterologically as resignation. Its physiological characteristics are muscular spasm, pallor of the skin, weak biological charge of the tissues, orgastic impotence, and anemia. This first phase is not specific of cancer biopathy, but is the same in all biopathies.

2. *Phase of shrinking.* This phase is characterized by shrinking of the erythrocytes, general weakness, loss of biological resistance in the total organism, loss of weight, and finally general cachexia.

3. *Phase of putrefaction.* This is characterized by loss of orgone charge in the tissue cells, transformation of the cancer substance into putrid matter, rapid development of rot bacteria (putrid disintegration), disintegration of the rot bacteria into T-bacilli, general T-bacilli intoxication, putrid bedsores, putrid odor, death.

The manifestations of the shrinking biopathy are identical with those of normal involution in old age, that is, with the gradual dying-off of the organism. The organism slowly shrinks in old age and undergoes putrefaction after death. *Cancer biopathy represents this process in a premature and accelerated form. The cancer death is a premature but regular death.* What is pathological in it is the prematurity and the acceleration, and the fact that putrefaction sets in while the organism is still alive. In an organ which, over a period of decades, is in a state of contraction, which breathes poorly and functions poorly orgonotically, death processes set in: orgone loss of the tissues and their cells, vesicular disintegration, formation of rot bacteria and T-bacilli. This disturbance affects primarily the blood system, and with that the total organism. The autonomic vital apparatus gradually shrinks. This process is the result of a disturbed sex-economy of the organism.

It takes place in the organism long before it produces *external symptoms* which are palpable to a mechanistic pathology. For this reason, the diagnosis of the local tumor *always comes too late.* For the same reason, *local therapy* by surgical operation, Xray or radium does not reach the cancer disease. The extirpation of a tumor may be ever so thorough, but the process of putrefaction is not touched by it. These facts are of extreme importance for a future prevention of cancer by orgone. Only when we are in a position to attack the general process of shrinking and putrefaction are we entitled to speak of cancer *therapy.* This principle follows from the bion experiments in cancer mice and underlies the orgone therapy experiments in cancer at our Institute.

It is well known that the cancer cell is biologically weak and disintegrates readily. The cancer tumor in itself is harmless unless it develops in vital organs (brain, liver, etc.). For this reason, people with small cancer tumors often continue their normal life,

without feeling ill. Many old people have cancer tumors which cause no complaints and which are not discovered until the post-mortem examination. The typical cancer pains and the general weakness do not set in until the *total organism* is affected to a considerable degree. After that, the deterioration is rapid.

Disintegrating cancer tissue always is putrid and has a putrid smell. The end-product of this disintegration is masses of T-bacilli. The biological weakness of the cancer tumor cells, therefore, constitutes the greatest danger for the patient, for the more cancer cells disintegrate, the more severe and widespread is the T-bacilli intoxication. In the case of orgone therapy, on the other hand, this fact constitutes a great advantage: *the tumor can be easily destroyed.* The difficulties of the orgone therapy of today do not lie in the destruction of the tumor but in the *elimination of the products of disintegration from the body.* In order to master this difficulty we have to know the nature of the products of disintegration. As we have already seen, an experiment points the way: If we boil healthy tissue, it disintegrates into *blue bions;* if we boil cancer tissue, it disintegrates into *T-bacilli.* The blue bions have a beneficial effect in the body, the T-bacilli an injurious effect. *In orgone therapy, therefore, the problem shifts from that of the destruction of the tumor to that of the neutralization and elimination of the products of disintegration.*

Of course, the putrefaction of the organism cannot be observed in the organs but only in the blood and the excretions. Since putrefaction is always preceded by shrinking and bionous disintegration, we have to examine the form and function of the erythrocytes. Healthy erythrocytes are taut and, at a magnification of at least 2000x, show pulsation. Erythrocytes in the process of shrinking are smaller, often not oval but round; the pulsation is weak or altogether absent. They are not taut, but often show a shrunken membrane. Healthy erythrocytes have a wide, intensely glimmering blue orgone margin; shrinking erythrocytes show a narrow and pale orgone margin. If the shrinking process has progressed to the point where shrunken membranes are immediately observable (formation of T-spikes, "poikilocytosis"), we test the resistance of the red cells in physiological salt solution.

Healthy red cells retain their normal shape up to half an hour or longer. Shrinking erythrocytes, or those with an increased tendency to shrink, often disintegrate within a few minutes or even seconds, show an irregular membrane and the so-called T-spikes (*cf.* fig. 41, p. 400). The presence of T-spikes points to an advanced cancerous degeneration. "Cancerous" here means nothing but shrinking (sympatheticotonia of the erythrocytes). Healthy erythrocytes disintegrate (slowly in salt solution, rapidly on autoclavation) into blue bions, cancerous erythrocytes into T-bacilli. Thus our tests result in a cancerous *T-reaction* compared with the normal B-reaction.

Healthy blood gives no cultures of bacteria in bouillon. *Cancerous blood gives cultures of rot bacteria and T-bacilli.* These organisms can also be found by direct microscopic examination (at a magnification of at least 2000x) in the blood of cancer patients.

All these findings make the blood particularly suitable for an early recognition of cancerous processes. I venture the assumption that the blood is the first system which is affected by a general condition of contraction and later shrinking of the organism. This is not surprising in view of the fact that the blood is the "sap of life" which connects all organs into *one whole* and nourishes them. The blood also plays the most important role in the orgone therapy of cancer. For this reason, we must thoroughly understand the orgonotic function of the blood.

Here I would like to mention the usual theory of the spread of cancer tumors to other places in the body. According to this theory, cancer cells from the primary tumor are transported by the blood stream to other organs where they settle down and grow into secondary tumors, the so-called *metastases.* Of course, this theory was arrived at by deduction; the process cannot be observed. The question is: is this hypothesis correct? Our observations and concepts provide a different and more plausible explanation: it is unnecessary to assume that the cancer cells are transported by the blood stream. Since the process of shrinking and putrefaction is a *general* one, it is not surprising that local tumors should develop earlier in one place and later in another.

At any rate, the case described in Chapter V revealed the fact that the localization of metastases is determined by local spasms and disturbed biological functioning. For example, there may be first a breast cancer as a result of a chronic tension in the pectoralis muscle, and somewhat later a second tumor at the ribs or the spine as a result of local spasms in the diaphragm. Muscular spasms are a general manifestation of a biopathy and constitute the general tendency to contraction and shrinking. The development of metastases has, of course, to be distinguished from the growth of the tumor into the adjoining tissue, as for example in the case of a cancer of the rectum which grows into the bladder.

This may be the place to mention an assumption concerning the nature of the cancer of the blood system, so-called *leukemia.* Further observations will have to prove or disprove this assumption. If the shrinking and disintegration of the erythrocytes is the most general and the earliest process in cancer, the tremendous increase in leucocytes is easily understood. The function of the white cells is not, like that of the red cells, the maintenance of tissue respiration and the supply of orgone to the tissues. Their function is the defense against bacteria and other "foreign bodies." Wherever foreign bodies (bacteria, dirt, etc.) lodge in the body, there is an accumulation of white cells, leucocytes, lymphocytes and phagocytes; purulent secretion and abscess formation are due to this. Now, when the erythrocytes begin to disintegrate, they turn into substances which are alien to the organism, into "foreign bodies." For this reason, the white cells multiply their defenses, in an attempt to "deal with" the disintegrating red cells. According to this concept, leukemia, the most prominent symptom of blood cancer, is nothing but a reaction of the organism to the shrinking of the red cells and the resulting development of T-bacilli. In accordance with this, one finds leucocytosis also in other diseases in which a shrinking of the blood system takes place. When the white cells dominate over the red cells; when, in addition, the organism has become too weak to supply fully-developed erythrocytes, early death becomes inevitable.

The problem of orgone therapy of cancer, therefore, is this: *Can the process of disintegration of the erythrocytes be arrested*

or even prevented? If so, an avenue of approach to the tremendous problem of the prevention of cancer is opened.

In a different connection, we will deal with the fact that the cells of a cancer tumor originally developed not as a symptom but as a *defense* against the pathological process. It will be shown that this is not as revolutionary as it sounds.

Before turning to the curative function of the blood, I have to answer two questions which the reader is bound to raise:

1. *How can one know that the cancer cell develops in the manner described here,* since the process cannot be observed in the organism? The question is pertinent and important. It can be answered. (*Cf.* the detailed discussion of this question, *infra,* p. 220 ff.)

2. *What constitutes the basic error of traditional cancer research?* How is it possible that the processes described here were so consistently overlooked? This is also a highly pertinent question.

Both questions are answered by one and the same fact: *The same omission which constitutes the basic error of traditional cancer research caused also the overlooking of the developmental stages of the cancer cell.* This we shall now discuss.

d) The development of protozoa: the key to the understanding of the cancer cell.

Mechanistic natural science, including mechanistic biology, is caught in the toils of mysticism. As I have pointed out so often, mysticism serves to fill the gaps which mechanism, when it comes to understanding living function, of necessity leaves open. Specifically: mechanistic natural science suffers from the preconceived idea that "cell can come only from cell," "egg only from egg." That eliminates the justified question as to where the *first* egg and the *first* cell came from. The elimination of this basic problem of biology makes it automatically impossible for the mechanist to perceive a series of facts. He assumes that for each and every one of the millions of different protozoa there is a special "*preformed*" germ "*in the air.*" Nobody has as yet seen any such germs. It seemed that with the "preformed" germs one could explain everything: tuberculosis, syphilis, pneumonia, etc. But then diseases

were encountered in which the explanation by way of "air germs" was not so simple. These are diseases which must be ascribed to extremely small, invisible particles which are on the borderline between living and non-living matter. Such diseases as poliomyelitis or foot and mouth disease are not understood to the present day. For no virus can be cultivated from the air. The *development* of bacteria and protozoa from bionous disintegration of living or non-living matter was unknown. The existence of living organisms in grass infusions was taken for granted, as was the existence of cancer cells in the organism. True, the question of the origin of the cancer cells was raised. Since, however, they (or their "germs") cannot be found in the air, while their existence in the organism cannot be doubted, and since, furthermore, there exists something like a taboo against the assumption of the development of cells from disintegrating tissues, the following was not done:

a) an exact examination of human excretions in their natural condition; and

b) an exact examination of the changes that occur in a grass infusion.

To any mechanistically oriented pathologist the contention that there is something like an autogenous infection, or even a development of protozoa in the organism, sounds *absurd.* He would not even listen to such a thing. *Nevertheless, the processes observable in the development of bacteria and protozoa from disintegrating grass or moss are the key to an understanding of the development of cancer cells and rot bacteria from disintegrating animal tissues.*

The question how it is possible to describe the development of cancer cells within the organism is to be answered as follows: In reality, we observe the development of protozoa and bacteria in grass or moss tissue in all its stages. If the assumption is correct that the amebae in the grass infusion are nothing else but the "cancer cells" of the grass, we can deduce the corresponding processes in animal tissues. This in itself would not be conclusive. Therefore, all the other observations made on the excretions of seemingly healthy and of definitely cancerous individuals, scattered and unconnected as they may be at first, are of the greatest

importance. If, now, we observe in the cancer tissue and its surroundings certain processes which are identical with those observed in disintegrating moss or grass, the *combined* observations and experiments become highly probable. They become a certainty if one produces artificial cancer in healthy mice and makes serial examinations in the various phases of the disease. The observations in disintegrating grass tissue, in the excretions of cancer patients, and in the tissues of mice with artificial cancer, then, combine to form a simple and conclusive picture:

1. The cancer cells are the protozoa in bionously disintegrating animal tissues.

2. The amebae and other protozoa in grass infusions are the cancer cells of the disintegrating grass.

3. The problem of the development of cancer cells is identical with the problem of biogenesis.

These three conclusions are enough to make one draw back. But great facts are always *very simple*. These conclusions make it possible to fill, with findings from the development of protozoa in disintegrating grass, almost any gap left by the impossibility of direct observation.

Between 1936 and 1942, I made grass infusions every year at various seasons. I was struck by the fact that it was extremely difficult or altogether impossible to obtain protozoa from infusions of *fresh, young spring* grass or moss, while autumnal grass or moss always gave an abundance of numerous kinds of protozoa. Such a finding would not impress those who believe in the hypothesis of the air germs. To us, however, it seems extremely important. *It confirms the identity of the protozoon in the grass infusion and the cancer cell in the organism.* For the cancer cell never develops in young, flourishing tissue, but readily in biologically damaged, aging, "autumnal" animal tissue.

I would like to stress the fact that I had never even thought of occupying myself with the cancer problem. It forced itself upon me when, in the course of my bion experiments, I discovered and photographed the development of protozoa from bions in grass infusions. In addition to normal grass tissue and fully developed protozoa, such a preparation contains a wealth of forms which a

mechanistic biology cannot define: individual blue vesicles; irregular heaps of such vesicles; heaps which show a membrane only in one spot; and other heaps which already show a taut form but are as yet only partly surrounded by a membrane. There is any number of forms at the margins of the disintegrating tissue which cannot be defined as either "grass" or "protozoon." (*Cf.* fig. 10, p. 374; figs. 11, 12, 12a, 12b, p. 375.)

Here I would like to relate an interesting little occurrence. In 1936, I asked the plant laboratory of the Oslo University for a culture of amebae. Naively I asked, "How do these protozoa get into that infusion?" I had forgotten that there was a "germ theory." The assistant looked at me in surprise, and said after a while, with a trace of contempt for my biological ignorance, "Why, from the germs in the air, of course. They settle in the grass." After that, I made hundreds of air germ cultures on various media, without ever seeing the germ of an ameba or an ameba itself. As time went on, I began to feel less badly about my "biological ignorance."

Another occurrence will show the reader that the human organism has correct knowledge even where officially it adheres to a misconception. In the fall of 1937, about a year and a half after the first conclusive findings, I prepared the first publication on the bions, the vesicular disintegration of matter and the development of protozoa. At that time, I had as yet no idea of the two basic types of bions, the blue PA bions and the black T-bacilli, or of the fact that the former can kill the latter. In brief, I had no idea that one day I would be put in the position of undertaking "orgone therapy experiments in cancer."

Then, in the fall of 1937, the campaign of the Norwegian mechanists and mystics against my bion research broke loose. Despite my explicit requests for quiet, the newspapers published numerous extensive articles pretending "finally to reveal the mysteries" of my laboratory. One day I was publicly accused of claiming that I was "able to cure cancer." I was nonplussed. Not only had I never made any such claim; I did not even harbor any thoughts about it. Why was such an accusation made against me, if accusation it be? Only much later, after the discovery of the killing effect of the blue PA bions, did I comprehend the accusa-

tion. Apparently, my hostile "critics" had had more of an inkling than I that the discovery of the biogenesis in protozoa would open a wide avenue of approach to an understanding of cancer. Traditional cancer research, in spite of decades of gigantic effort, was in a hopeless blind alley—due to a taboo which blocked any approach to the *development* of protozoa. Protozoa were not supposed to develop from bionous grass. They were supposed to develop, due to a supernatural power, from "germs," germs which nobody had ever seen and which were supposed to exist, "preformed," from eternity to eternity. When I realized this, I took up, without any specific idea in mind, my observations of the cancer tissue which the cancer hospital had sent me many months before. I was in the habit of simply letting preparations stand in order to see what finally became of them. There were some old cultures of cancer tissue in bouillon. To my surprise, *all of these now showed a blue-green discoloration.* They had a strong acid, ammonia-like and putrid odor. The inoculation on agar resulted in an intense smooth growth of blue-green color. Taking material from the margin I inoculated another agar plate—and for the first time saw the T-bacilli which were to break down the wall which hitherto had surrounded the cancer problem.

The T-bacilli have been extensively described. Thus I can confine myself to a description of the development of the cancer work. This is imperative. For the simple statement, *"Cancer is basically a putrefaction of the blood and tissues, a slow living death, as it were,"* assumes meaning only through the connections which disclosed themselves spontaneously in the course of many experiments and observations. This description will make clear why the simple nature of cancer has hitherto been overlooked. A lump of gold in the Colorado mountains is a very simple fact. But to find one's way to it is complicated and possibly dangerous.

The discovery of the T-bacilli in old cancer tissue immediately confronted me with several questions, the solution of which took many years of hard work:

1. *Can T-bacilli, when injected into healthy mice, produce cancer?*

2. *What is the connection between T-bacilli and cancer cell? Are they its cause or do they result from its disintegration?*
3. *If the T-bacilli are the cause of the cancerous growth, how do they get into the organism to begin with?*

At the time of the discovery of the T-bodies, I had, of course, no idea of their connection with the process of death and of the fact that, quite generally, they are the result of putrid disintegration of living tissues. But the path over which I was led by my experiment with the T-bacilli disclosed new secrets of the cancer scourge at every step. The description of this path is thus identical with a description of the nature of cancer as far as it has been disclosed to date.

But before turning to this description, I shall answer the question as to the error of traditional cancer research which was raised above. In summary, it is this:

1. Neither the blue bions from which cancer cells develop nor the small T-bacilli into which they disintegrate can be seen in the stained tissue section. They can be seen only in the living preparation. Traditional cancer research, however, works almost exclusively with dead tissues.
2. For the same reason, the intermediary stages in the development of cancer could not be discovered.
3. With a magnification below 2000x, no correct observations are possible. Traditional cancer research, however, rarely works with magnifications exceeding 1000x.
4. The denial, on principle, of the natural organization of protozoa from living or non-living material completely blocked any approach to an understanding of the cancer cell.
5. The erroneous hypothesis of the "air germs" diverted the searchers' attention.
6. The cancer disease is a general disturbance of functioning in the biosystem. Therefore, it can be comprehended *functionally* only. Medicine and biology, however, have a mechanistic, purely physicochemical orientation. They look for causes in *individual* cells, *individual* organs, *dead* tissues, and *individual* chemical substances. Thus the *total function,* which determines every detail function, remains overlooked. Similarly, the sexual function re-

mains the stepchild of science. The functioning of a radio set cannot be explained by a description of the chemical composition of the glass or the metal of the tubes, or a description of the mechanical arrangement of the parts. Similarly, the biopathic function of the cancer disease can never be described by the form and the stain reaction of the cancer cells of the healthy tissue. Neither can the chemical composition of the protein, may it be ever so complex, ever disclose one iota of the *living pulsation.*

Let us now follow the path over which we are led by the investigation of the T-bacilli.

2. LIVING DEATH: ORGONE LOSS OF THE TISSUES AND PREMORTAL PUTREFACTION

I must go far back and summarize widely scattered facts. The T-bacilli disclose a *deadly* process in the *living* organism, a *"living death."* "T" derives from the German word for death, *Tod,* and refers to two facts: the T-bacilli are the *result* of the dying of living tissues; they are also the *cause* of death if injected into mice in high dosages.

When I had obtained my first culture of T-bacilli, I injected it into healthy mice. Many of these died within one week, others rallied, only to die a few months later. In the course of about two years (1937-1939) several hundred healthy white mice were injected, in groups of six. Two mice of each group were injected with PA bions alone; two were injected with T-bacilli (the dosage varying from group to group); and two were injected with T-bacilli *and* PA bions.

The combined injection of PA bions and T-bacilli was suggested by the microscopic observation that the PA bions paralyzed and agglutinated the T-bacilli. As previously reported, the result after two years was the following: all mice injected with PA bions alone remained healthy; all mice injected with T-bacilli alone soon died or developed, within about 15 months, various stages of cancer; most of the mice injected with PA bions *and* T-bacilli remained healthy. *This effect of the blue* PA *bions was the starting point of the orgone therapy experiments in cancer.*

I might limit myself now to the purely empirical results and

content myself with the practical success achieved so far. This would save the reader a good deal of thinking about complicated processes. Unfortunately, I cannot do so. True, what has been achieved has made a wide breach in the cancer problem, but it will take a great deal of intensive work if cancer is to be really eliminated from the world.

The most general result of the orgone therapy experiments is this: *it will be far easier to prevent cancer than it is to cure a fully developed cancer.* Just this makes it necessary for me to go into more detail: *The cancer problem is identical with the infinitely difficult problem of the connection between life and death.* As we have seen, cancer is nothing but a premature and accelerated "normal" dying-off of the organism. The processes which lead to the premature death from cancer are exactly the same as those which lead to natural death.

I can assure the reader that I am fully conscious of the enormous implications of these statements and that I am not making them frivolously. I did not even look for the problem. I found myself squarely confronted by it in the course of the bion experiments. I had to make a choice: either to give up the whole bion research, or else to venture upon this gigantic problem. If I did not immediately publish the first bion experiments, although they were highly successful, it was because it had very soon become clear that the cancer problem was identical with the life-and-death problem. This is not as surprising as it may seem at first glance, since the very first bion experiments and the observation of the natural organization of protozoa had led straight into the question of *biogenesis.* This, too, was altogether unintentional. The bion experiments, through the findings concerning the PA bions and T-bacilli, led directly to cancer. Since life and death are inextricably interlaced, the question of the development of protozoa inevitably led to the question of cancer *death,* and with that, of death in general.

Unconsciously, I must have been somehow prepared for the whole problem. I had come in contact with the problem of death as long ago as 1926 when I began to refute Freud's hypothesis of the death *instinct.* I was able to show that a *wish* to suffer and die

does not exist. But there is an *objective process of dying* which sets in long before the acute stoppage of the heart. After I had succeeded in refuting the theory of the death *instinct*,[3] the interest in the objective process of dying, nevertheless, remained, a process which the individual does not wish for but fears and to which the organism, sooner or later, must succumb. *The T-bacilli are a palpable part of this death process.* This I shall now substantiate.

Orgone biophysics reduces all manifestations of life to the basic biophysical function of *pulsation*. Fundamentally, the life process consists in a constant oscillation of the total organism and each one of its organs between *expansion* and *contraction*. "Health" is characterized by a sex-economic energy household and by the *completeness* of this pulsation in all organs. If expansion chronically predominates at the expense of contraction, we speak of vagotonia. If contraction chronically predominates we speak of *sympatheticotonia*. As we have seen, this chronically fixed contraction leads to muscular spasms and a chronic attitude of inspiration. This leads to an excess of carbon dioxide in the tissues (Warburg) and the process of shrinking and loss of body substance which culminates in cachexia.

The life process, then, functions as a constant pulsation. This pulsation takes place in each organ according to its own intrinsic rhythm, and in the total organism according to a pleasure-and-anxiety rhythm which depends on the individual character. In the healthy organism, an energy surplus is periodically equalized by the extreme pulsations (contractions) of the orgasm. However, expansion and contraction also govern the *total life time* in *one extended* pulsation. The expansion of the biosystem sets in with the fertilization of the egg and continues—with expansion outweighing contraction—until middle age. Until the forties, growth, sexuality, *joie de vivre*, expansive activity and intellectual development normally predominate. From then on, with the onset of "aging," of so-called involution, the contraction of the vital system gradually gains the upperhand. Growth ceases and is replaced by a very gradual shrinking of all vital functions until at an advanced age it goes as far as involution of the tissues. The natural

[3] *Cf.* The Function of the Orgasm.

involution of age goes hand in hand with the cessation of the sexual function. The urge for sexual pleasure, for activity and development decreases correspondingly. The character turns "conservative," the desire for rest gains the upperhand.

This natural contraction of the vital system may, at an advanced age, culminate in a "physiological cancer death." At an advanced age, cancer is far less dangerous than in youth. In many cases of death from old age, cancer, of which there had been no indication, is accidentally discovered on autopsy. The death of the organism itself is accompanied by an intense muscular contraction, the so-called rigor mortis, which clearly shows us the contraction of the vital system. Finally, the organism is dissolved in putrefaction. Dead tissue, in contrast to living tissue, shows no changes in bio-electric potential. Dying tissue gives only negative bio-electric reactions; the source of biological energy becomes extinguished. A fish, for example, shortly after death, still shows an orgonotic field around its body, but the reactions are weak and disappear soon. Dead branches—in contrast to living ones—show no orgonotic field. This means that the dying organism loses its biological energy. First the orgone energy field around the organism shrinks, then the tissues lose their orgone. This is the objective fact behind the popular belief that at death "the soul departs." Not, of course, in the mystical misinterpretation of a formed "spirit" which disappears into space and later inhabits other bodies or waits for the resurrection of its own body. The fact is, however, that the orgonotic charge of the body is the basis of living perceptions and that these perceptions decrease with the dwindling of the orgonotic charge. This process of dying does not take place in the few hours of actual dying, but, normally, stretches over decades. *Acute* dying, characterized by stoppage of the heart, is only one phase of this process, although the decisive one. Even after the stoppage of the heart, not everything is suddenly "dead"; individual life processes continue for some time until they gradually cease as a result of lack of oxygen. Sudden death due to "shock" is nothing but a rapid total contraction of the vital apparatus to such an extent that a renewed expansion fails to occur.

The putrefaction of the tissues which follows death is the re-

sult of a bionous disintegration of the tissues. It is not necessary to assume that now "rot bacteria from the air" settle in the body. One would have to ask why it is that the rot bacteria in the air do not settle in the healthy *living* organism and cause it to rot. This is not an academic or rhetorical question. For it is the all-important question of the *natural defenses which the healthy organism puts up against the "living death" as it lives.* Bion research succeeded in giving a conclusive answer to this question.

On the most primitive levels of living substance, expansion, energy metabolism, etc., are represented by the blue PA bions, while its contraction and putrid disintegration are represented by the T-bacilli. *Is this also true for the higher organisms?* The essential characteristic of the PA bions is that they are carriers of orgone energy, "orgone energy vesicles." The T-bacilli, on the other hand, are characterized by orgone weakness or the lack of orgone charge. All body cells consist of blue, orgone-charged energy vehicles. The taking up of food constantly provides orgone in the form of the PA bions contained in the foodstuffs. As we have seen, the PA bions kill the T-bacilli because of their strong orgone charge. That is, they prevent putrefaction in the organism. Similarly, the orgone of the sun radiation kills rot bacteria. The functioning of the life process is to be ascribed to the disinfecting and charging effect of the body orgone, in brief, to the function of expansion. It counteracts the function of contraction and prevents this function from gaining the upperhand and resulting in the formation of T-bacilli and putrefaction.

If the orgonotic function of charge and expansion diminishes, the function of contraction can gain the upperhand and lead to death processes. The T-bacilli are a manifestation of such death processes. The cancer biopathy is nothing but such a death process. Therefore, the cultivation of the positive life functions, such as pleasure, development, activity, etc., is decisive in the prevention of premature death processes. The extension of the average life-span in many cultural circles during the past decades is to be ascribed to the break-through of natural sexual functioning.

These assumptions are inevitable if we try to reduce our diverse

observations to a common denominator. This, and nothing else, is the task of natural science. The carcinomatous shrinking biopathy—we can justly call it a sex-starvation disease—can be comprehended only in the context of concrete processes of life and death.

When, in 1937, I succeeded for the first time in producing cancerous growths in healthy mice by the injection of T-bacilli, I believed I had discovered the "specific cause" of cancer. The T-bacilli had been cultivated from cancer tissue; they produced cancer in healthy mice; cancer cells disintegrate into T-bacilli. These are clearly and easily established facts. Does traditional cancer research know these facts? It *does*, but in a peculiar manner:

Traditional cancer research has been on the trail that leads to the T-bacillus for a long time. It was only the prejudice of "air infection," and the rejection of the idea of an autogenous infection which prevented classical cancer research from enjoying the fruits of its hard experimental labor.

3. RIDDLES IN TRADITIONAL CANCER RESEARCH

The search for the "tumor agent." I should like to summarize the riddles in traditional cancer research which indicate an inkling of the T-bacillus. In doing so, I follow the extremely instructive comprehensive presentations by Blumenthal[4] and by Adam and Auler.[5] As a result of the war, I was not able to read all the originals; this does not impair my summary, since I am referring to excellent reviews of the subject.

The basic question of traditional cancer research, as of orgone biophysics, is this: Is the cancer disease represented by a tumor and metastases only, or does it already exist in the organism previous to the appearance of a tumor? And, if so, in what form? In the first case, the essential pathology would lie in the cancer cell,

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[4] ERGEBNISSE DER EXPERIMENTELLEN KREBSFORSCHUNG UND KREBSTHERAPIE. Leiden, 1934.

[5] NEUERE ERGEBNISSE AUF DEM GEBIETE DER KREBSKRANKHEITEN. 47 Vorträge gehalten mit Unterstützung des Reichsausschusses für Krebsbekämpfung in einem internationalen Fortbildungskurs der Berliner Akademie für ärztliche Fortbildung (1936). Leipzig, Hirsch, 1937.

in the second case in a "something" which is not the cancer cell itself but which has a definite relationship with it. The answer to this question is of paramount importance, for the evaluation of tumor operations as well as the possibilities of earlier diagnosis of the cancer disease, and, particularly, for the prevention or elimination of this "something."

Attempts to produce cancer in experimental animals by the transplantation of tumor pulp convinced the cancer researchers that a positive result requires the transplantation of considerable amounts of tumor pulp. Experiments with centrifuged material and filtrates were negative. The looked-for tumor agent is always bound up with the residue of the centrifuged material. In connection with the T-bacilli, a hypothesis of R. Krauss, based on experiments by Swarzoff, who saw cancer cells develop from tissue fragments and partial cells, is very important. "Omnis cellula e *granula*," says Krauss, instead of the traditional "e cellula." That cancer cells develop from "*granules*" fits in with the orgonological observation that they organize themselves from bions.

With that, the emphasis shifts from the cancer cell to the *development of the bions in the organism. The cancer cell then becomes not so much the cause of the disease as the sign and result of a third, more general factor, something that exists before it.*

Ernst Fränkel found the agent of the Rous chicken sarcoma bound up with the erythrocytes and the globulin. Certain experiments showed a carcinogenic principle in the spleen, free or in the spleen cells. Animal experiments point to a peculiar connection between spleen function and tumor function. If the spleen is removed in tumor rats, anemia does not develop at first, but does when the tumors disappear. That is, the tumor can take over certain activities of the spleen. This seems very peculiar, but it points again to the *blood and its corpuscles*. As is well known, the spleen is the storage place for erythrocytes. *It is absolutely obscure*, they say, *what becomes of the disintegrating erythrocytes*. They have some relationship with cancer, but what this relationship is is not known. Blumenthal's assistant Lindner was able to produce in other animals of the same kind tumors with blood drawn from a tumor vein; with one exception, they were always tumors of the same kind. Such experiments also succeeded with blood from the heart or the axillary vein. Such experiments showed that *the cancer agent is bound up with the solid parts of the blood.* They succeeded particularly easily with clotted blood and washed erythrocytes. The T-bacillus does, in fact, develop in degenerating erythrocytes. *Venous blood* was shown to be far more effective than arterial blood: cancer tissue shows symptoms of suffocation, that is, CO_2 excess. Laser once succeeded in producing cancer in a chicken in the following manner: He had injected a chicken with tar solution and then, at a time when there was as yet no tumor, had cultivated macrophages from its blood. Injected into a second chicken, these macrophages resulted in a tumor. This experiment permits the interpretation that the macrophages had incorporated the agent circulating in the blood and had transmitted it to the second chicken. A number of researchers have expressed the opinion that this agent was a part of the cancer cells which appears in the circulation only *when the cancer cells disintegrate*. For white blood cells from sarcoma rats, when injected in other rats, resulted in sarcoma. We are confronted with the confusing fact that the "something" which causes cancer *is present in the blood previous to the existence of cancer cells and that it also develops from the disintegration of cancer cells.*

This "something," it is said further, may be present in an organ without tumor formation. Numerous ingenious experiments show again and again that *the blood cells have a close connection with the malignant cells*. "The normal blood cells," says Blumenthal, "must contain substances which are indispensable for the activity of the etiological cancer principle. Blood cells are particularly rich in coagulable albumin. . . . This fibrinogen apparently unites with the etiological factor of the cancer cell and transfers it to the cells of the organism . . . changing normal cells of the organism into cancer cells. . . . *In all cases it has been shown that something emanates from the cancer cells which changes previously normal cells into cancer cells*" (Italics mine.—W.R.).

The looked-for "something," then, is bound on the one hand to the blood cells and on the other hand to the cancer cells, and produces cancer cells from normal cells. These findings pose many

questions for traditional pathology. Among the most important are the following:

Is this carcinogenic something an enzymatic substance, that is, *not* a living organism? For as long as it is not shown that it can multiply, it cannot be likened to a living organism.

Is this something a chemical substance of the body which stimulates normal cells into producing this same substance, turning them into tumor cells? Is it a chemical poison, a lytic substance, an autocatalyst?

Is it cellular? If so, the question arises: Can something be cellular and infectious, and yet not "parasitic," that is, not "body-alien"? We have to remember that in the case of the carcinogenic stimulus we are not dealing with the establishment of transferred cancer cells but with a *new disease of previously healthy cells.*

The riddle of this peculiar something, then, presents itself somewhat like this:

It is present in the organism *before* the cancer cell, bound up with the blood solids. But it also develops from the cancer cell. It acts like a parasite and at the same time like a poisonous chemical substance. It is "infectious" while the cancer disease is non-infectious. It turns a normal cell into a cancer cell and derives from the cancer cell. It acts like a parasite and yet does not come from outside the body.

Blumenthal states correctly: *"We see, then, that the cancer problem touches the boundary between living and non-living, the question whether animal cells can produce something with parasitic characteristics." Our T-bacilli form this bridge.* Our T-bacilli experiment confirms a conc pt which has become common in modern cancer research and which Blumenthal summarizes as follows:

> In the case of the Rous sarcoma, then, it has been shown that there is something present within and without the tumors with which one can produce tumors, that, in other words, the tumor agent or tumor principle does not have to be a tumor cell. The essential difference between the tumor cell and the tumor agent with regard to cancer formation is this: the tumor cell only produces tumor cells of the same kind, while the agent does not multiply itself but influences previously healthy cells so as to become cancer cells.

This characterization applies to the T-bacilli:

1. They exist in the blood and the tissues *before* the tumor.
2. They cause the development of cancer cells and result, at the same time, from the disintegration of cancer cells.
3. They result from the disintegration of erythrocytes.
4. They are *genuine* bacilli with *parasitic* characteristics, and at the same time cancer is not infectious.
5. The T-bacilli actually form a bridge from the non-living to the living, for they develop from coal bions through degeneration, and they multiply.
6. They are in fact the products of animal cells with parasitic characteristics.
7. They are in fact poisonous, have an as yet obscure connection with potassium cyanide, and their effect is similar to suffocation and respiratory paralysis.

If the T-bacillus is the looked-for specific cancer agent, the animal experiment must show the following:

1. Injection of T-bacilli in healthy mice must result in destructive and infiltrating cell growth. 2. It must be possible to recultivate the T-bacillus. 3. The experimentally created tumors must contain T-bacilli. All of these three conditions are fulfilled in the T-mice experiments.

a) The T-bacilli experiment in healthy mice (1937-1939).

These experiments were done mostly in "series of 6." Each type of the packet-ameboid bions was injected into 4 mice, to check the pathogenicity. Two of these 4 mice, two days after the first injection with PA bions, sometimes after a second injection with PA bions, were injected with one of the different strains of T-bacilli. A third pair of mice was injected with T-bacilli alone. The dosage was the following: A full loop of PA bions was dissolved in 3 cc. of sterile physiological NaCl solution or in a potassium chloride solution. Of this solution, 0.5 cc. was injected subcutaneously in the back. In the T-bacilli experiment, 1 loop was dissolved in 5 cc.

and of that 0.5 cc. or 0.25 cc. was injected. Until the end of January, 1939, a total of 179 mice were thus injected. Among these 84 T-bacilli mice, 30 died in the course of the first 8 days after injection; another 30 died in the course of 15 months. The remainder were, at the time when this protocol was concluded, all sick. Of the 30 mice which died in the course of 15 months, 25 were examined for cancer growth. Seven of these showed, in the epithelia of the stomach and intestines, the cervical glands, genitals and other locations, *cancer cells with ameboid movement*. Thirteen of these mice showed the typical caudate cell formations of spindle and club shapes, and infiltrations in various organs, predominantly in the peritoneum, the cervical glands, genitals, stomach and duodenum. The remaining 5 mice showed no unequivocal findings.

Of 45 mice which had been injected first with PA bions and *afterwards* with T-bacilli, 36 remained healthy and 9 died in the course of 15 months. The 39 mice which had been injected with PA bion cultures alone, showed no signs of disease during this same period. Of 10 mice which had been injected first with T-bacilli and afterwards with PA bions, 8 died in the course of 15 months, and 2 were killed because of abscesses.

The T-bacilli, regardless of their origin, regularly resulted in the formation of caudate club-shaped cells in various organs. The effect of the blue PA bions was also the same in all types. In two cases a packet-ameboid type (SAPA 1), injected after the application of T-bacilli, resulted in dry, "clean" ulcers, similar to "Xray ulcers," at the place where the T-bacilli had infiltrated the tissue after injection. The following kinds of T-bacilli were used in the experiment: T-bacilli cultivated directly from sarcomatous and carcinomatous tissues (T Ca 10), from the cardiac blood of mice having died after tar application experiments (T II 6), from the blood of healthy humans through degeneration (T 10), from the blood of cancer-suspect individuals in whom the usual clinical examination was negative (T 10), from degenerated bion cultures (6 d TT and 10e 41 T), from the cardiac blood of mice having died from Bluko tumors (Bluko-T), and finally, T-bacilli recultivated from the cardiac blood of these series of mice (10 Ge Tr, 10 Ta Tr, 6 dT Tr, etc.). All the various kinds of T-bacilli resulted in all stages of cancerous growths in healthy white mice.

Summary:

1. The T-bacilli act in a parasitic manner, yet derive from body substance.
2. They develop through degeneration of tissues and organisms.
3. They develop when carbon disintegrates into bions.
4. They are somehow related to potassium cyanide.
5. They stimulate bion formation.
6. They are always a sign of a sympatheticotonic contraction and shrinking of the organism.

The syndrome of T-bacilli intoxication is typically the following: A few hours after the T injection the body of the mouse bends, the movements become sluggish, the mouse drags its legs and loses appetite. Conjunctivitis and abscesses occur, but are atypical. If the mouse does not die within about 8 days, it seems to recover its health. This recovery, however, is only apparent. *For after 2 to 5 months, a new process of contraction and shrinking regularly sets in;* the picture of the first days after the T injection recurs, but this time much more slowly, the process having a chronic character. *The organism gradually shrinks, until death occurs.* These animal experiments, carried out between 1937 and 1941, disclosed, without my being conscious of it, the *carcinomatous shrinking biopathy* which, after 1942, I discovered and learned to comprehend in human cancer. Autopsies of such mice, after being killed in various stages of the disease or after spontaneous death, regularly showed the following: T-bacilli in all organs and in the blood (cultivable in bouillon); atrophic and necrotic processes in the mucous membranes, particularly of the gastrointestinal tract; cancerous blood picture, anemic blood cells, shrunken membranes with T-spikes; enlarged liver with atrophy of the cells and nuclei and the lobules, accumulation of T-bacilli in the renal glomeruli with atrophy of the epithelial cells.

The longer a mouse lives after the T injection, the more numerous and developed are the spindle and club-shaped cell formations in the various organs. Ameboid cells in the submaxillary gland, in

the kidney or the urinary bladder, make certain the diagnosis of full-fledged cancer. The development of polyp-like growth of the intestinal epithelia goes hand in hand with complete atrophy of the mucous membrane in the vicinity. In male mice one often finds cancer cells, including ameboid forms, in the testicles.

The general conclusion with regard to the autonomic life apparatus is the following: *The flooding of the organism with T-bacilli leads to a gradual contraction and shrinking of the tissues as well as the individual cells.* The result is loss of weight, atrophy and degeneration of the cells, ending in putrid degeneration, that is, simply in putrefaction. In the experimental T-mice, this process of shrinking is produced by the injection. In human cancer, vegetative shrinking as a result of vegetative resignation precedes the formation of T-bacilli. The increasingly developing T-bacilli accelerate the general shrinking process and stimulate local defense attempts, that is, tumor formation. Further observation will decide the question as to whether the local tumor always constitutes a defense reaction, and in how many cases the tumor arises from local tissue damage and secondarily leads to a general shrinking of the life apparatus.

b) Stages of cancer cell development in the T-bacilli mice experiments (1937-1941).

Comparison of the tissues of mice which in the course of 4 years had died or had been killed, resulted in the following picture of the T effect on the tissues. These observations centered essentially on the *degree of maturation* of the caudate spindle and club forms in the tissues, forms which are never found in healthy mice or mice with any other disease. These forms, *viewed at a magnification of 3-4000x*, are so unequivocally typical that they cannot be confused with any other type of cell. Only a cylindrical epithelial cell of the gastrointestinal tract may, at low magnification, be taken for a maturing cancer cell; some experience with the differences, however, will prevent such a mistake.

I shall now describe the autopsy findings according to the various *stages* of the T-bacilli effect. It was shown that the cancer disease requires a very long period of time for maturation. The

ameboid cancer cells represent the most mature stage; however, many mice died before reaching this stage if there was far-reaching tissue infiltration and destruction of physiological functioning (septicemia, nephritis, atrophy of the liver, etc.).

1. Tissue damage through swelling and vesicular disintegration (*Ca I*):

As shown by the T-bacilli-albumin experiment, this damage results from a direct attack of the T-bacilli on the tissues; or it is inflicted by chemical or mechanical trauma, such as tar or a bruise, and in this case secondarily a place of action for the T-bacilli. We must assume that in the case of chemical or mechanical trauma to the tissues, the carcinogenic stimulus results *from the formation of T-bacilli from the disintegrating tissue* through degeneration. This would explain cancer formation from scars or burns.

The tendency to rapid vesicular disintegration and formation of T-bacilli is one of the most important signs of early cancer formation. True, as long as the total function of the organism is intact, its defenses may suppress this tendency. *Tissues showing rapid swelling in KCl, vesicular disintegration and formation of T-bacilli must be considered cancer suspect.* This opens the possibility of *early* recognition, long before there are organized cancer cells or even destructive growth and infiltration.

2. Acute inflammatory stage (*Ca II*):

The organism reacts to the damage done by the T-bacilli with the well-known means of hyperemia, concentration of white blood cells, and formation of granulation tissue. As the animal experiment has shown many times, the inflammatory growth may remain localized or it may spread, without necessarily having to be termed carcinomatous. One finds *brownish* or *brownish-red* granulation tissue expand from the point of injection along the blood and lymph vessels into deeper tissues, particularly toward glands. Microscopically, in living tissue as well as in section, one finds the ordinary elements of any inflammation, but as yet no trace of carcinomatous cell forms.

3. Individual spindle, club and caudate cell forms in chronic inflammatory growths (*Ca III*):

This third, already carcinomatous stage is characterized by

processes which are never found in pure inflammation or in healthy tissues, in particular, spindle and club-shaped conglomeration of vesicles *and vesicular disintegration of the tissues surrounding the inflammation*. Macroscopically, one finds that the brownish granulation tissue shows no sharp boundary toward *grayish-white* hard streaks. In part, these are newly formed connective tissue; but they already show a multitude of cells of different kinds (*cf.* fig. 23c, p. 383). The leucocytes are less prevalent, and there are cell formations *of a new kind*. These forms, which show various degrees of organization, are all characterized by *an extraordinary biological stainability* (chromophilia). No matter what their size, they all have in common the tendency to caudate club shape. In lungs, kidneys, liver, glands and omentum one finds the same grayish-white streaks which, in the Eosin-Hematoxylin preparation, show nothing but the picture of chronic inflammation. The dead stained section, at this stage, shows as yet nothing of the carcinomatous bion formations, vesicle heaps, spindle formations, etc., which we can very readily see in the *living* preparation at a magnification of *4000x*. *Thus the diagnosis of cancer may be obvious from the living preparation at a time when such a diagnosis is as yet impossible from the dead stained preparation*. There may, for example, be the following picture in the living preparation of kidney tissue (*cf.* fig. 39, p. 399): Three cells around a tubule are as yet completely normal, showing homogeneous plasma, distinct nucleus in the center, and no vesicle formation whatsoever. The fourth cell, however, is already club-shaped and shows vesicular structure and chromophilia all over. The nucleus can no longer be distinguished from the plasma structure; nuclear material fills the total cell body. *The change from normal cell to the cancer cell of the first stage (Ca III), then, takes place by way of vesicular disintegration of the cell and of its taking the shape of a caudate club*. Often one finds that *two* or *three* cells confluesce and form *one* caudate club cell. This phenomenon can be experimentally reproduced. If we send electrical impulses of about 8 to 10 V through the preparation (muscle or kidney tissue in KCl solution), we see the progressive appearance of vesicles in

the plasma, strong light refraction and elongation. The boundary lines between the cells disappear and they confluesce into one piece. Staining with methylene blue shows that the vesicularly disintegrated cells take the stain faster and more strongly than the healthy cells. We are dealing here with the same formations which in the Eosin-Hematoxylin section gave the impression of "chromatophile," oval or spindle-shaped bodies. If one never finds such formations in the lungs or kidneys of healthy mice, and if one finds them *regularly* in diseased mice in the chronic inflammatory stage (Ca III), one is justified in diagnosing them as *early stages* of the later ameboid cancer cell. All the more in that with increasing duration of the illness these forms become more and more numerous and distinct. The conclusion from this series of observations in T-mice is the following: *One* healthy cell may change into *one* cancerous spindle formation. As a rule, however, *several* healthy cells undergo vesicular disintegration, and confluesce into *one* vesicle heap, from which then *one* or *several* cancer cells develop.

Among these new formations in diseased tissue are also peculiar forms which develop from vesicularly disintegrated erythrocytes together with loose vesicular bion heaps. It is to be assumed that in the process of vesicular tissue disintegration any new combination between the destroyed forms is possible. It took great pains to find these new formations in the stained section after they had been found in the living preparation. Fig. 24b, p. 385, shows the chromatophile cells which correspond to the vesicular spindle-shaped new formations.

With a magnification of about 1600x we may find in the stained section, along with healthy light rows of cells, strongly stained cells and cell heaps which are not found in the intestinal epithelium of healthy mice. If one finds extensive growths of such cell forms *outside of the intestines* (*cf.* fig. 24c, p. 385) and if one has found heaps of spindle forms in the living preparations of the same tissue, then the diagnosis of *cancer of the third stage (Ca III)* is certain. In many mice one finds the same dark cell heaps which one sees inside the intestinal epithelium also *at far distant locations*, such as the epidermis of the neck or the back, as well

as in the connective tissue around blood vessels, in and around glands, in fat tissue, etc. (*cf.* fig. 22, p. 381).

In many cases one sees, at a magnification of 4000x, glandular cells which have detached themselves from the membrane and have changed into the dark, strongly stained club shapes. In other cases, the whole gland is permeated by masses of such degenerated cells. As far as I know, these forms are unknown in pathology. I was not able to find them in textbooks of pathology; various pathologists gave different diagnoses or admitted that they were unable to make a diagnosis. One pathologist considered them pancreas cells because they were found outside of the stomach; but when I showed him the same cells in the connective tissue of the neck he admitted they were something new to him.

That true cancer tumors develop from chronic inflammatory processes (tuberculosis, syphilis, scars, etc.) has been known for a long time, but interest was always centered on the question as to the nature of the cancer cell. Our bion experiments and, particularly, the new tissue formations in T mice enable us to clarify this question a good deal. They enable us to make the diagnosis of "cancer of the first stage (Ca I)" on the basis of the living preparation at a time when the histologist, on the basis of the stained section, still diagnoses "chronic inflammation." The sharp diagnostic distinction of genuine tumors from chronic inflammations, made on the basis of the dead stained section, is understandable from the standpoint of pathological histology. In order to create a common basis for the discussion of the findings set forth, consideration of the results of examining the *living preparation* is indispensable. *In bion research, the diagnosis of "malignant tumor" is established if the living preparation shows vesicular disintegration of the cells and spindle forms (Ca III) even though only sporadic.* When these findings are present, what remains to be determined is only the stage of maturation of the tumor cells.

Blumenthal writes: "Autonomous growth may be a characteristic which exists only seemingly, for we may discover in this or that tumor that it is of an infectious origin. This would, as Lubarsch says, restrict the realm of autonomous tumors and extend that of the infectious neoplasms, leaving fewer and fewer

genuine cancer tumors. The study of all these tumors would constitute a large part of what cancer research was previously concerned with. After all, autonomous growth is conceived of only as the opposite of such tumors in which the growth stimulus is a parasite and where the tumor ceases to grow when the parasite dies. The place of the parasite can be taken by another stimulus which, from the standpoint of the cell, is to be considered exogenous. Autonomous growth means nothing but that the growth stimulus is assumed to be in the cell. After all, autonomous growth, in spite of the presence of the stimulus, can be a characteristic of *the cell only*. In cancer, this stimulus, if present, is necessary only for the precancerous stage, that is, it constitutes the stimulus for the development of normal cells into cancer cells."

On the basis of the bion experiment and the T-bacilli experiment, I must fully agree with Blumenthal: The T-bacilli, indeed, only form the stimulus for the change of normal cells into cancer cells. *The T-bacilli are responsible only for the precancerous stage.* Once the cancer cells are formed, their growth is completely autonomous, that is, *independent* of the T-bacilli.

The pathologist and cancer researcher Borst[6] recognized this problem long ago:

The histological diagnosis of carcinoma is often difficult. One speaks of precancerous changes and points out that cancer is often preceded by atypical epithelial growths comparable to those in chronic inflammation. There is no doubt that there are fluid transitions from epithelial growths of an inflammatory, regeneratory or hyperplastic nature to carcinoma. It is impossible, however, to predict histologically what is going to become of the various atypical epithelial growths. One only knows empirically that some of these growths turn into cancer more frequently, others rarely and still others never. On the other hand, our knowledge of the reversibility of these growths is incomplete. In view of this, it is not advisable to speak of *precancerous changes* because this term implies that these atypical epithelial growths are *obligatory* early stages of cancer. It would seem better in certain cases, guided largely by experience, to speak of *cancer-suspect*

[6] Borst, Max: Pathologische Histologie, 1938.

growths and to advise the physician to watch them carefully. The histological picture of the so-called atypical epithelial growths can be highly reminiscent of incipient cancer. How can the histological boundary line be found here? The important characteristic in cancerous epithelial growths certainly is *the autonomous penetration of the epithelium into the connective tissue*. The epithelial cells leave their place on the surface and penetrate into the depth, the glandular epithelium breaks through the membranae propriae. The histological diagnosis of a carcinoma, then, will be based primarily on the heterotopy of the epithelial growth. It must be pointed out, however, that in chronic inflammatory processes also the epithelial cells often penetrate far into the connective tissue, particularly in ulcerous and fistula-forming processes. These *"inflammatory"* epithelial heterotopies are not easily distinguished from carcinoma. The heterotopy *alone* cannot be considered sufficient histological proof of carcinoma; one will also have to look for the destructive character of the cancerous epithelial growth. In carcinoma we find an *autonomous* penetration of the epithelial cells, often without accompanying connective tissue, the epithelial cells *replacing* and *destroying* the tissue. While, thus, carcinoma can be diagnosed from the *destructive heteretopy of autonomously growing epithelia*, we must admit that *early stages of carcinoma, in which the growing epithelium remains within its physiological limits*, cannot be diagnosed histologically. Though there are no absolutely certain and specific histological signs for what Ewing called *potential malignancy*, certain *nuclear changes* in the not yet destructively penetrating epithelium indicate an incipient cancerous change with a degree of probability. If an epithelial growth shows a very considerable variability with regard to size, shape, chromatin content and general structure of its nuclei, this always indicates poorly regulated cell division and justifies the suspicion of cancer.

The bion experiments described above bridge the gap which was so clearly formulated by Blumenthal and Borst:

1. Between the stage of the "biologically damaged but still normal cell" and the stage of the "destructively growing cancer cell" there are a number of transitional stages:

a. vesicular disintegration of the healthy cells;

b. organization of the bionous cell mass into spindle and club forms;

c. maturation of these forms, at various speeds, into mature, independent cancer cells;

d. autonomous growth of the cancer cells into a tumor.

2. The destructive "penetration" of the cancer cells into their environment has to be ascribed largely to the bionous disintegration of this environment itself. It is as if the surrounding healthy tissue would retreat from the cancer cell mass, in this process undergoing a carcinomatous change itself. "Carcinomatous" change here means nothing but *bionous disintegration as a result of inner suffocation*. This concept is in agreement with that of Bierich[7]:

> Cancer tissue shows an aerobe glycolysis and a relatively high concentration of lactic acid; this may give us an idea of how the tumor influences its immediate environment. Cori, Warburg and ourselves found that the tumor tissue gives off lactic acid. Since, however, the lactic acid content of the tumor remains high, the lactic acid also must go from the tumor directly into the surrounding tissue. We examined the effect of lactic acid concentrations as they occur in tumors when applied to normal tissues. We found that the structure of the connective tissue was gradually dissolved; in this process, the same alterations occurred as one observes in the course of experimental tar cancer development in the connective tissue immediately adjoining the tumor. This dissolution is a proteolytic process, the occurrence of which in living tissue requires the presence of lactic acid, activated kathespin and a third factor. When the specific structures in the connective tissue adjoining the tumor are dissolved, the normal physiological boundary line between epithelium and connective tissue has disappeared, and the cancer cells now penetrate into the neighboring tissue. Since it can be assumed that the lactic acid is also the pacemaker for the penetration of the cancer cells into epithelial tissues or blood vessels, it can be seen that the "uninhibited growth" of the tumor *does not result immediately from its cells, but only secondarily after the destruction of the adjoining tissues.*

[7] Bierich, R.: "Ueber den Stoffwechsel der Krebszellen," in: NEUERE ERGEBNISSE AUF DEM GEBIETE DER KREBSKRANKHEITEN. Leipzig, 1937.

Thus the cancer cell loses in significance compared with the tissue damage which precedes its formation. *The cancer cell is a result, and not the cause,* of the disease "cancer." It becomes an immediate danger to life only through its disintegration into T-bacilli.

The question as to the specific stimulus which changes a normal cell into a cancer cell, is to be answered as follows:

T-bacilli, resulting from vesicular disintegration of the tissues (self-destruction), form the specific stimulus for cancerous formations, by first stimulating bion formation. The effect of the T-bacilli is limited to this. The further development of the bions into cancer cells and the growth of these into a cancer tumor is autonomous, that is, independent of the T-bacilli. The cancerous bion formation and the resulting cancerous cell formation must be considered as a DEFENSE *of the organism against the stimulus by the T-bacilli. It is, however, a* PATHOLOGICAL *kind of defense, making use, as it does, of the destruction of healthy cells. In turn, it provokes a new kind of defense of the organism against the destruction.*

4. The mature cancer cell (*Ca IV*):

This fourth, mature stage is characterized by *ameboid cells.* They represent the last stage of maturation of the spindle cell forms. Unless the organism dies in the early stage of chronic inflammation or the early cancer stages (Ca II and Ca III), the new cell formations have time to develop into true amebae (*cf.* fig. 40, p. 400). Mechanistic cancer research considers them to be "parasites"! In F. Döflein's LEHRBUCH DER PROTOZOENKUNDE we find the following:

> Lieberkühn already had observed peculiar cells in the ascites which is formed in the case of certain malignant tumors; he observed their motility, but said nothing else about their nature. Since then, these cells have been seen by many observers, but have not been paid any attention to.
>
> Not until 1896 were they more closely examined. Leyden and Schaudinn reached the astounding conclusion that they were dealing with a new kind of rhizipode living as parasite in human ascites. Since this is the first time that an eminent protozoologist established the protozoal nature of formations found in human cancer, the clinical findings being established by one of the foremost authorities, the matter deserves some discussion.
>
> According to Leyden, these formations were found in the ascites of a man who suffered from carcinoma of the stomach (later confirmed by autopsy) and of a girl with tumors in the abdomen. The ascites fluid contained, besides white and red blood cells and endothelium-like cells, "numerous round cells filled with fat-like droplets and yellow pigment, usually arranged in larger groups and difficult to separate." They moved vividly with pseudopodia, particularly in the warm days of July. In fluid which was kept sterile for 3 to 7 days they did not die but retained their motility. Some contained red blood cells in their plasma. Schaudinn, who examined the formations closely, decided they were ameboid parasites.

One sees how far astray the prejudice of parasitic infection has led even eminent scientists. What Leyden observed was nothing but ameboid cancer cells *which had developed in the organism itself.* The fallacious concept of cancer cells as exogenous parasites is found as recently as 1942 in James Ewing's NEOPLASTIC DISEASES:

> *Miscellaneous Protozoa.* Other observers could not regard all the cancer-cells as alien parasites, but certain of the tumor-cells they identified as parasitic amebae because of their bizarre forms and long pseudopodia which stretched between adjacent cells. There were the "Rhopalocephalus carcinomatosus" of Korotneff, and "Cancriamaeba macroglossia" of Eisen. L. Pfeiffer described and depicted intracellular structures which resembled the microsporidia of muscle tissue.
>
> Podwyssozki and Sawtschenko described as sporozoa a variety of free and encapsulated intracellular structures many of which resembled Soudakewitsch's parasites. Ruffer and Walker improved the technical methods of demonstrating the cancer bodies and endeavored to distinguish between true and spurious parasites. Kahane thought he detected a minute protozoon in the circulating blood of cancer patients. In cancerous ascitic fluid Schaudinn observed a large ameboid cell which he named Leydenia gemmipara. Schuller traced the complete cycle of a minute intranuclear protozoon in cancer-cells which differed from nearly all other cancer parasites.

We must assume that the malignancy of a tumor depends on the degree of maturation of the cancer cells, as well as the rapidity with which the cancer cells and the destroyed tissues disintegrate into T-bacilli. As the mouse experiment has shown, metastases are already found in the maturing stage (Ca III); but spindle or round cells with limited motility cannot do the same damage as amebae with rapid movement and great destructivity.

5. Putrid disintegration *(Ca V)*: the final stage of the cancer tumor:

If the tumor is exposed to the air, putrid disintegration may be ascribed to simple infection. But disintegration of the tumor with the formation of rot bacteria and T-bacilli is characteristic of all dying cancer cells. This disintegration of newly formed cells into bacteria corresponds to the experimental disintegration of egg medium with the addition of T-bacilli. The Eosin-Hematoxylin picture is the same in either case (*cf.* fig. 28d, p. 391). It is similar to that of postmortal tissue necrosis in which animal protein disintegrates into its chemical constituents. We are thus justified in speaking of "premortal necrosis" in the stage Ca V. In the final stage, the cancer disease shows a tendency to ever more rapid destruction of the total organism. This becomes now comprehensible, since the rapid disintegration of the cancer cells into T-bacilli results in a general bacteriemia and toxemia of the organism. Cancer death, unless there is a gross disturbance of vital functions through the tumor itself, is a death from general toxic putrescence. For this reason, the disease in the last stage usually takes a rapid turn for the worse, leading to death.

c) Understanding experimental tar cancer in mice.

Traditional cancer research has made a wealth of experimental findings hardly any of which can be made to fit into an understandable context. One such unexplained finding is the experimental production of cancer in mice and rabbits by tar application. Yamagiwa[8] and Itschikawa were the first to succeed in producing cancer by continued application of tar substances to the ear of rabbits; they produced carcinomatous ulcers and in some

[8] All quotations in this section are from Blumenthal, *loc. cit.*

cases also metastases in regional glands. Tsutsui, Dellman, Bloch and Dreifuss made similar, highly successful experiments in white mice. The question arose, of course, as to what parts of the tar had this carcinogenic effect. Dellman found that only tar distillates of 900° to 1000° C. and above are effective; Kenneway and Russell obtained the same results with coal tar after heating it to 900° C., while it had remained ineffective unheated. The carcinogenic effect of tar has remained unexplained. Two questions remained to be answered:

1. Why and how do tar substances create cancer? 2. Why is only highly heated tar substance effective?

Blumenthal summarizes the respective experiments as follows: 1. The tar cancer, as Lubarsch was the first to point out, does away with all kinds of cancer theories, such as that of a unitary cancer agent, malformation, and embryonic germ. The rabbit ear has no particular disposition and thus there can be no question of inherited disposition. 2. Cancer formation is preceded by an *inflammatory* stage of long duration.

These two statements are a body blow to the hereditarian concept. They are also strictly at variance with those pathologists who try, by all means, to make a sharp distinction between the inflammatory and the cancerous process. The tar experiments are in accordance with the old experience that people who work with tar and aniline, as well as chimney-sweeps who are constantly in touch with soot, develop cancer more often than other people.

What does the bion experiment contribute to these problems? First of all, it provides us with some basic facts as a prerequisite for an understanding of the problem:

1. Protozoa, including the cancer cells, develop from bion vesicles (orgone energy vesicles).

2. Animal and plant tissues can disintegrate into bions.

3. Carbon, the essential constituent of animal protein, plays a central role in the bion experiment: carbon, heated to incandescence, together with substances which make it swell and with culture media, results in bions and bion cultures.

4. All highly heated tar substances, *at a magnification of*

2-3000x, show vesicular structure of the character of the bions produced by heating carbon to incandescence.

Unheated carbon is basically different from carbon *heated* to incandescence. The former shows very little vesicular structure. The latter, however, brought into a substance which makes it swell and into a medium, immediately disintegrates into bion vesicles. The former shows its own color, black, in the fluorescence microscope; the latter shows not a black, but a *bluish* fluorescence.

In making a carbon bion preparation, we observe the following remarkable facts: The more we heat the carbon, the more easily and rapidly do the bions develop and the blue color of the carbon bions supersedes the black color of the carbon. The carbon bion, of course, is something entirely different from the carbon from which it develops. To begin with, the structure has changed. A carbon crystal became a sum of orgone energy vesicles. These vesicles can swell, divide, permeate substances, etc. Put into a culture medium, they take up protein fluid and various salts. True, we do not know as yet what precisely the carbon bion is, chemically speaking; but we know for certain that it is no longer pure carbon. Its behavior in the culture experiment shows its close relationship to living protein. Living protein is not merely a highly complex carbon-hydrogen compound. It differs functionally from non-living protein: *the chemical substances are only the bearers of the orgone energy which governs the living function.*

If mature carbon bions are brought together with protein substances, such as egg medium IV or autoclaved blood, microscopic observation shows that the carbon bions penetrate the protein substance and, together with it, organize into various formations.

If one pours fresh carbon bion solution on egg medium IV, one finds in the course of a few weeks small "growths" on the medium, about the size of a pinhead (Ca experiment XIV). Microscopic examination shows peculiar organized structures which did not previously exist either in the carbon bion preparation or in the egg medium (*cf.* figs. 27b and c, p. 388).

If one injects carbon bions, fresh or 24 hours old, subcutaneously in mice, similar structures develop at the point of injection. In the course of months, cell growths develop with a strongly

chromophilic structure which penetrate and infiltrate the tissues and gradually destroy them. In some of the cases, microscopic examination showed the organs to contain the typical spindle and club forms, that is, cells of the immature stage Ca III. The carbon bion experiment was made in 34 healthy mice. All of them became ill and most of them developed precancerous and matured growths (10 e Ca).

These experiments explain the effect of tar application. Highly heated coal substance is carcinogenic because at high temperatures carbon bions develop from the coal substance, and these bions are the basic element in the organization of carcinomatous formations.

In the course of these coal bion experiments, the question arose whether it was only the coal bions which caused the growths or whether T-bacilli also were responsible. I painted mice with tar in the usual manner. Some of them died before the development of a growth. The blood of these contained T-bacilli which could be cultivated in pure culture (T II 4); inoculation of the cardiac blood of some mice which had gone beyond the stage of chronic inflammation and had reached that of infiltrating growth also resulted in T-bacilli.

How did the T-bacilli get into the blood of the tar mice? For a long time, this question remained open. Then it occurred to me to stain a freshly made coal bion solution and I found that *T-bacilli can be demonstrated immediately after making the coal bion preparation.* Non-heated and untreated carbon, however, does not react to Gram stain. In one case I succeeded in cultivating the T-bacilli in pure culture from coal bions (10 e T XVI).

That is, with the highly heated carbon-hydrogen substance, T-bacilli are introduced into the organism. The question remains as to how the coal bions in the tissues act on the T-bacilli. Do they combine their effects, or do they hinder each other? Microscopically one finds that the coal bions attract T-bacilli, irritate and paralyze them. The answer to this question is important, theoretically as well as practically, but for the time being I know of no experimental solution.

Protein substances, then, are stimulated into growth by coal bions (PA and T). This explains also the chimney-sweep cancer,

the cancer of tar and aniline workers and the cancer of the lip of pipe smokers.

4. THE CANCER CELL: PRODUCT OF A DEFENSE REACTION OF THE ORGANISM

Cancer often develops from old scar tissue and from tissues which are exposed to a chronic damage as, for example, the chronic irritation of the epithelium of the tongue caused by bridge work. Severe tissue injury may result in sarcoma which may be fatal in a short time. The bion experiments now make this understandable: *tissue damage results in substances which degenerate into T-bacilli and thus stimulate cancerous growth.* In orgonotically strong, that is, healthy tissue, a scar or injury has no disastrous effect. That is, the decisive factor is *not*, as is customarily assumed, the local tissue damage, but the orgonotic strength of the tissue, the condition of the tissue which we might call its *"orgonotic potency."*

All these phenomena became more comprehensible through the T-bacilli and confirmed my assumption that the T-bacilli were the specific cause of cancer, occurring only in cancer patients. It is always reassuring to find the "specific cause" of a disease. This enables us to delineate the disease from healthy organisms in which this specific cause is absent. But this concept is erroneous and blocks the approach to the nature of *immunity*, that is, the natural defense functions of the organism which are identical with its orgonotic potency. It would be erroneous to assume that there are people who are psychically healthy on the one hand and people who are psychically sick on the other hand. It would be equally erroneous to assume that there are "cancer patients" here and "individuals free from cancer" there. Every "healthy" individual has, somewhere in the depths, his catatonic mechanisms and his T-bacilli. The boundary line is not sharp, and the emphasis shifts from specific "causes" of disease to the *orgonotic defense function against diseases.* Before trying to treat diseases, *we must first comprehend health.*

Fortunately, the view begins to prevail in medicine that specific "microorganisms" and specific "causes" can become effective

only if the organism permits it. Tubercle bacilli, for example, can affect the organism only if it presents certain conditions of bioenergy. A psychic trauma, in order to become effective, presupposes an emotional predisposition of the organism. Similarly, the tubercle bacillus can attack the organism only in the presence of a certain general impairment of biological functioning. In other words, we must consider the disposition to disease the decisive factor. *Not*, however, in the sense of the usual theories of heredity and constitution, in predetermined "genes" or moralistic concepts like "psychopathic constitution." To us, "disposition to disease" is determined by the *living orgonotic functioning and its disturbances.* In other words, it is essentially acquired as a result of misery in life, and not from the forbears in prenatal life. *Disposition to disease is determined by the nature and the extent of the emotional—or orgonotic—motility of the biosystem.*

The general assumption is that the cancer cell *causes* the onset of the disease process "cancer," in that "normal cells change into cancer cells." Exact study of the *development* of cancer cells shows this assumption to be erroneous. The reverse is true: the cancer cell is the *result* of the fact that the tissue fights against the effects of the T-bacilli. This may sound peculiar, but only until one observes the facts. The first step in the development of the cancer tumor is not the cancer cell, nor the disintegration of the tissue into blue bions, but the mass appearance of T-bacilli in the tissue or the blood. T-bacilli are also found in *healthy* tissue and *healthy* blood. They are found wherever there is disintegration of protein.

After having made a series of examinations of the blood in cancer patients, I proceeded to examine the blood of people in whom the presence of cancer in the usual sense was out of the question. It was found possible to cultivate T-bacilli from the blood and the excretions of completely healthy people. This fact was disturbing and confusing. If, as I had come to believe in 1937, the T-bacilli were *specific* for cancer, and at the same time, they could be cultivated from healthy individuals, this could only mean that *all* people are basically suffering from cancer. Since this conclusion could not be correct, the only alternative was the conclusion that the T-bacilli are *not* specific for cancer. On the

other hand, there was the incontrovertible fact that every cancer patient and all cancer tissue showed T-bacilli in abundance.

It was months before consideration and experiment provided the correct answer: *the difference between the healthy individual and the cancer patient does not lie in the absence of T-bacilli, but in the orgonotic potency of the organism.* That is, the healthy, orgonotically potent organism has the capacity of getting rid of what T-bacilli may be present, and the tendency of its blood and tissues to disintegrate into T-bacilli is very slight.

True, I was able always to cultivate T-bacilli from the blood and the excretions of healthy people. But there was an important difference: the blood and tissues from cancer patients produced T-bacilli *easily* and *rapidly;* the blood and excretions of healthy individuals, however, had to be subjected to a *process of degeneration,* sometimes of days, sometimes of weeks, in order to obtain T-bacilli from them. *The disposition to cancer, then, can be determined by the biological resistance of blood and tissues to putrid disintegration. This biological resistance, in turn, is determined by the orgone content of blood and tissues, in other words, by the orgonotic potency of the organism.* Accordingly, to the extent to which any process diminishes the orgone content or the orgonotic function of the organism or of any of its organs, it will increase the disposition to cancer. There are a number of relevant observations and experiments here.

When I was confronted with the difficult and decisive question as to whether the T-bacilli appear only where cancer develops or whether they occur everywhere and whether cancer also can make its appearance everywhere, I began to examine the blood, epithelium and excretions of many healthy individuals. I found local T-bacilli formation in organs and tissues where cancer was out of the question. For example, I saw disintegration into T-bacilli in the vaginal or cervix epithelium of many women. In some, the T-bacilli disappeared after some time, in others they remained constant. In myself, I found T-bacilli at the tongue, in a place where a dental bridge had caused a small erosion, and I was able to cultivate them. This was about nine years ago, and I still have no cancer. I cultivated T-bacilli from the blood of one of my assistants by making it degenerate; I injected the culture into a healthy mouse and obtained an adenocarcinoma in the buttock muscle. This was the first malignant tumor which I obtained through T-bacilli from healthy blood. That the tumor resulted from the T-bacilli was shown by the following facts: the mouse developed an inflammation from the place of the injection along the lymph vessel on the right flank toward the buttock muscle; at that spot, a chronic inflammation in the muscle developed which then continued into glandular cancer tissue. Pathologists at Columbia University made the diagnosis of "a true neoplasm." (*Cf.* fig. 23a-e, p. 382ff.)

Even the healthiest organism contains T-bacilli and has the tendency to putrid disintegration. *The disposition to cancer, then, is universal.* But as long as blood and tissues are strong in orgone, every developing T-bacillus is destroyed and eliminated before it can multiply and do damage. Wherein, then, does the very first damage consist? The answer to this question also provides the proof that the formation of cancer cells is a defense reaction of the organism against T-bacilli rather than the cancer disease itself.

When T-bacilli begin to form and to amass anywhere in the body, the organism reacts with *mild* but *chronic* inflammation. Occasionally, the accumulation of white blood cells alone can get rid of the T-bacilli. In other cases, however, the autoinfection with T-bacilli is too strong or the orgonotic defense of the organism too weak. The question is, what happens then? How does the affected tissue react in this case?

One answer can be derived from an experiment in the test tube. A certain sterile egg medium is inoculated with T-bacilli. They grow on this medium. But we find that *not* only T-bacilli grow. The medium had been examined minutely, at a magnification of at least 2000x, and neither T-bacilli nor PA bions had been found. But now, after inoculation, we find not only the expected T-bacilli, but—to our greatest surprise—also a wealth of *mobile blue* PA *bions.* That means, the inoculated T-bacilli not only have grown in the egg medium, but also *have caused the organic protein to disintegrate into blue* PA *bions.*

Exactly the same thing takes place in the healthy tissue of a

mouse which we inoculate with T-bacilli in such dosage that the reaction is not immediate abscess formation and death, but a mild, chronic inflammation: *in the neighborhood of the inoculation, the tissue shows bionous disintegration.* If one dissects series of T-mice from the first day to about the tenth week, one can follow the development of the cancer cells from the PA bions.

I repeated these two experiments many times and obtained always the same result, without, however, understanding it at first. And even when I began to understand it, the enormous significance of this fact escaped my attention for some time. In brief, *the T-bacilli, which are the product of a putrid disintegration of organic or living matter, stimulate in other organic or living matter the formation of blue bions.* This bion formation—considering the antagonistic action of blue PA bions and T-bacilli—has the function of reacting *against* the T-bacilli. That is, *the blue* PA *bions are a defense reaction against the T-infection.*

If there were no more to the process than this local formation of PA bions, this local B-reaction, the T-bacilli would be of no further interest. In the blood of healthy individuals, one often sees the blood platelets—which are nothing but blue PA bions—surrounded by dead T-bacilli. Occasionally, one sees leucocytes filled with T-bacilli. We must assume that this struggle of the PA bions against the T-bacilli (i.e., the B-reaction) takes place all the time and everywhere in the healthy organism. Now, the weaker the orgone charge of the PA bions, *the more* of them must be formed in order to get rid of the T-bacilli that are present. But the blue PA bions develop into higher biological forms, protozoa, and, among them, into cancer cells. *The cancer cell is in reality a product of the many* PA *bions which were formed from blood or tissue cells, as a defense against the local autoinfection with T-bacilli.* A seemingly very complicated situation thus becomes quite simple.

I would like to mention here a seemingly far-fetched, but really pertinent fact: Humus is bionously disintegrated matter. The fertilization of humus is effected with substances derived from putrid disintegration of organic matter, mostly simple nitrogen compounds. This kind of "fertilization" is nothing but the stimulation of blue PA bions in the humus through putrid material, that

is, T-bacilli. The fact is striking that humus is sterile and has a sterilizing effect. This is due to the blue earth PA bions. They can easily be produced by autoclaving earth in KCl.

The T-bacilli experiments open an occasional, though still vague, vista of a future chemical concept. Only one interesting fact shall be mentioned here. The putrid disintegration of protein substances results essentially in simple organic compounds (such as urea, scatol, indol), i.e., constituents of urine and feces. Old T-bacilli cultures have an acid and ammonia-like putrid odor. The odor of advanced cancer patients is very similar and quite typical. "Living putrefaction," then, is no mere simile, it is an actual fact.

There is a still obscure relationship between the T-bacilli and cyanide (CN), a constituent of potassium cyanide (KCN). This poison characteristically paralyzes cell respiration, as was shown by O. Warburg. Many of our T-mice died with typical manifestations of suffocation, such as hypervenous blood and respiratory paralysis. The connection between the T-bacilli and the suffocation metabolism of the cancer tissue is obvious. Here is a vast field of exploration for the biochemist.

Thus far, we have discussed only one direction in which the T-bacilli affect the organism: tissue damage→T-bacilli→bionous tissue disintegration→organization of protozoal cancer cells from the tissue PA bions. This process runs from the T-bacillus to higher biological forms.

There is, however, also the converse process, consisting in the disintegration of the cancer cells into T-bacilli and in *intensified* putrefaction: Cancer cell→T-bacilli→general blood and tissue putrefaction and T-intoxication. The actually fatal process is not the growth of cancer cells but the *secondary T-disintegration.* While the tissue damage is at first localized and the T-bacilli small in number, the disintegration of the cancer tumor results in a gigantic acceleration and in a general spreading of the putrefaction in the body: *putrefaction of the blood, and T-bacilli-intoxication of the body fluid system.* Clinically, this is represented in the fact that cancer patients may get along fairly well for months, even years, until suddenly general decline, rapid cachexia and death set in. In contradistinction to the phase of tumor formation, this

second phase, that of the disintegration of the cancer tumors into putrid masses, lasts only a few weeks. The formation of T-bacilli and putrefaction are a *cause* as well as a *result* of the cancer biopathy.

This distinction is of eminent practical significance. Once the stage of secondary putrid disintegration in tumors, tissues and blood has been reached, the T-bacilli are formed in such enormous quantities that any therapeutic attempts are doomed to failure. In the first phase, however, in which cancer tissue is being *formed*, orgone therapy is highly effective. More about this later.

The whole problem of therapy and prevention in cancer can now be reduced to a simple formulation: The T-reaction of the organism, its orgone-weakness, has to be counteracted by the B-reaction, the strong orgonotic reaction of blood and tissues. The fate of the patient depends entirely and exclusively on the relation of the B-reaction to the T-reaction. Before discussing the practical possibilities here we must learn more about the effects of the orgone energy.

5. A NOTE ON THE PROBLEM OF HEREDITY

The reader who has some familiarity with the cancer problem will raise a very pertinent question: *What about the heredity of cancer?* He will point out that it has been shown that there are strains of mice with an especially high incidence of cancer, and that in man cancer occurs more frequently in certain families than in others. I have had to explain on many occasions that *we do not deny the existence of heredity. But the fact must be sharply emphasized that the theory of heredity does not answer the question as to what this heredity concretely consists of, in what biological functions it expresses itself.* The mysterious "genes" neither explain anything theoretically nor are they of any help practically. Since its infancy, sex-economy has been prepared to encounter one day in a practical way those *mechanisms* of the heredity of characteristics and conditions about which the research on heredity has nothing to say. It is not a matter of "hereditary substances," but of plasm *functions*. In our cancer research, we came upon the question of heredity in a quite unexpected, but *simple* way. It

provided an answer which is quite different from that in the case of character traits. Most pathological character traits can be ascribed unequivocally to the influence of early upbringing, resulting in identification and early sexual stasis. That is, this "heredity" of biopathic character traits is clearly a *postnatal* phenomenon; in other words, it is not heredity at all. The heredity of cancer, on the other hand, shows itself to be of a *prenatal* nature, although in an entirely different way than heredity research may think of.

In our laboratory, hundreds of white mice, healthy as well as cancerous, have been observed. We were struck by the infrequent occurrence of cancer in the young of our cancer mice. At first we were content with the not very relevant explanation that we were dealing with a strain which was not a specific cancer strain. Of course, we are speaking here only of mice which developed cancer spontaneously, and not as a result of experimental procedures.

The surprise came in those mice which originally were completely healthy and which, between the ages of 3 to 8 months, had been injected with T-bacilli. We were soon struck by the frequency with which *the young of these, originally healthy,* mice became sick and died at an early period, often with cancer tumors. On the other hand, control mice (which had not been given T-bacilli injections) never had cancerous or otherwise sick young. Autopsy and bacteriological examination of the cancerous young of T-mice showed exactly the same findings as in the T-mothers themselves: T-bacilli in the blood, putrid disintegration of the tissues in stomach, glands, and especially in the genitals. Mice who develop a spontaneous cancer tumor usually show no cancer manifestations in other organs (except possible metastases). Mice injected with T-bacilli, on the other hand, show cancer manifestations in almost all organs. This is easily understandable, since the spontaneous tumor derives from a local tissue damage while the tumors in the T-injected mice result from a general spread of the T-bacilli in the organism. Such T-mice often die of general carcinosis and T-intoxication without developing local tumors of any appreciable size. This seems even to be the rule and is ex-

plained by the fact that the injected T-bacilli are carried by the blood stream to all parts of the organism in great numbers.

Now we understand why the young of T-mice so often developed cancer prenatally when the mothers had been injected previous to their birth: *The injected T-bacilli get from the maternal blood stream into that of the embryo and produce cancer in the embryo.*

This fact throws light on a large sector of the problem of cancer heredity: *If an expectant mother has in her blood a sufficient number of sufficiently virulent T-bacilli, the embryo will of necessity become infected with the T-bacilli.* Whether the organism of the child can get rid of the T-bacilli or not depends primarily on the relation of the B-reaction to this early T-reaction.

The development of breast cancer in white mice is as yet not understood. The fact should be emphasized, however, that these mice do not lead a normal sex life. Either they are constantly separated from the males or breeding is artificially regulated. Some of our observations in T-injected male mice suggest that sexual stasis increases the T-reaction and decreases the B-reaction of the organism. Males which were kept in sexual abstinence showed a greater tendency to develop cancer, especially of the testicles, than males which were left together with females. Though these findings are highly suggestive and quite in accordance with general sex-economic findings, I would like to stress the fact that these special experiments need to be carried out on a much broader basis.

In human mothers, we have, in addition to the transmission of T-bacilli in the blood, other "hereditary" influences: *spasm of the uterus* and general biopathic *respiratory inhibition*. Nothing definite can be said about these factors at this point. But there can be no doubt that a severe respiratory disturbance in the mother must damage the tissue respiration in the embryo; the same is true of a chronic spasm of the uterus. But such prenatal influences on the embryo are not hereditary factors in the sense of the gene-theorists. Rather, they are *social* factors. Strictly speaking, the maternal organism is the first "social factor" in the life of the unborn embryo.

The usual mechanistic and metaphysical hypothesis of heredity does not enable us to understand any prenatally acquired disturbances, let alone to manage them practically. The knowledge of the existence and the nature of the T-bacilli, of character structure and the function of pulsation in the parents, on the other hand, opens avenues of approach to the problem of heredity which may become of great theoretical as well as practical significance.

The problem of heredity of cancer could possibly be solved if we would treat mice of established high percentage of cancer heredity with orgone. Any reduction or even elimination of cancer in the new generations of cancer strain mice would prove the correctness of the orgone-biophysical viewpoint.

We tried to obtain mice with high heredity of cancer, but, unfortunately, the Jackson Memorial Laboratory in Bar Harbor, Maine, was unable to provide them.

This excursion into the problem of heredity was made necessary by certain pertinent observations which are closely bound up with the orgone therapy of cancer. We have to familiarize ourselves more and more with the thought that, first, *cancer begins to lose its horror,* and, second, that *the prevention of cancer will prove easier than its cure*. For example, it is already possible to determine how great is the tendency of the maternal blood to disintegrate into T-bacilli, whether it contains free T-bacilli, etc. In such cases, orgone therapy of the mother could protect the embryo against the effects of T-bacilli. If necessary, the infant could be given orgone therapy. We do not know as yet whether the T-bacillus is specific for cancer only or whether it will produce other diseases when it takes effect in a different form and in different localizations. Here is an enormous field for investigation which will yield surprising findings. It will probably provide the explanation of infectious diseases as seemingly disparate as acute ptomaine poisoning and the acute stage of poliomyelitis. Though laboratory findings make this appear a reasonable assumption, it is, nevertheless, no more than an assumption.

CHAPTER VII

ORGONE THERAPY: ITS NATURE AND DEVELOPMENT

We are now prepared to discuss the biophysical basis of orgone therapy. It can be reduced to a simple biological formula: *It furthers the B-reaction of the organism and decreases or eliminates the T-reaction.* If the blood and tissues show a predominant T-reaction and we do not succeed in increasing the B-reaction, the orgone therapy has failed. Conversely, it has been successful if the T-reactions are replaced by B-reactions. The following is a schematic presentation of the two antagonistic reactions:

	B-REACTION	T-REACTION
1. *Total organism*	Elastically erect. Tonus good.	Shrunken. Flaccid or hypertonic.
	Absence of spasms and clonisms.	Spasms and clonisms.
	Feeling of strength.	Feeling of weakness.
	Capacity for pleasure.	Incapacity for pleasure; pleasure anxiety.
2. *Skin*	Warm, ample blood supply; good turgor; rosy or tanned; capable of producing warm sweat.	Cold and clammy; poor blood supply; poor turgor; pale or livid; cold sweat.
3. *Musculature*	Relaxed, capable of alternating tension and relaxation; strong.	Chronically tense or flaccid and atrophic. Often excessive fat.
	No muscular armor.	General muscular armor.
	Lively peristalsis, no constipation or hemorrhoids.	Constipation, hemorrhoids, etc.
3a. *Facial expression*	Lively, variable.	Rigid, masklike. Expression of dying.

	B-REACTION	T-REACTION
4. *Blood*	B-reaction on autoclavation. Erythrocytes taut, pulsating; showing strong, wide orgone margin; slow disintegration in NaCl solution.	T-reaction on autoclavation. Erythrocytes small or shrunken, not pulsating, showing T-spikes; weak, narrow orgone margin; rapid disintegration in NaCl solution.
	No T-bacilli in culture.	Culture shows staphylococci, streptococci or T-bacilli.
5. *Cardiovascular system*	Pulse regular, quiet and strong.	Pulse irregular, abnormally fast or slow, weak, small.
	Blood pressure normal.	Blood pressure abnormally high or low.
6. *Tissues (epithelial cells, tissues obtained by biopsy, etc.)*	Vigorous turgor.	Poor turgor, shrinking.
	No bion formation in KCl.	Bionous structure or rapid bionous disintegration in KCl.
7. *Eyes*	Bright.	Dull, "far away."
	Lively pupillary reaction.	Pupillary reaction sluggish, often mydriasis.
	Eyeballs neither protruding nor sunken.	Eyeballs protruding or sunken.
8. *Respiration*	*Full* expiration with pause after expiration;	*Inhibited* and incomplete expiration, with pause after inspiration;
	free pulsation of thorax;	fixation in a chronic attitude of inspiration (anxiety);
	genital pleasure sensations after each expiration.	no genital pleasure sensation after expiration.
9. *Orgasm*	Regularly occurring, full body convulsion	Absent or disturbed.
	No sexual stasis.	Chronic sexual stasis.
10. *Orgone field around organism*	Wide and variable.	Narrow or absent.

The symptoms of the T-reaction are identical with many of the symptoms of chronic sympatheticotonic contraction. The symptoms of the B-reaction, on the other hand, are not identical with chronic vagotonic expansion; rather, they correspond to a condition of the organism which is characterized by a *quiet, orderly and full pulsation in all organs.*

The primary effect of orgone therapy (not only in cancer, but in all biopathies, based, as they are, on a contraction or shrinking of the vital apparatus) *is the reduction of contraction and promotion of expansion.* Once the organism regains the ability to expand, to dilate its vessels, to admit body fluids into skin and tissues, to relax the muscles, to let the intestines move peristaltically, in brief, *to let the whole autonomic system expand,* then normal pulsation follows *of itself;* then, that condition of living functioning re-establishes itself which we call oscillation between contraction and expansion, that is, *biological pulsation.* The dominance of the B-reaction over the T-reaction is nothing but the dominance of all life-positive reactions in all parts of the organism. Since the organism is a functional unity, the orderly pulsation of the total organism is *the* prerequisite for keeping down the T-reaction in tissues and blood. Since the T-bacilli result from the chronic contraction (T-reaction) of the organism, it follows that *the basis of cancer prevention is the full natural pulsation of the organism.* This corresponds to the fact that chronic contraction is the general basis of the carcinomatous shrinking biopathy.

All this makes perfectly clear the fact that the cancer problem cannot be restricted to individual organs, an individual tumor or some individual local therapeutic measure. It is a matter of the total biological functioning of the organism. It is clear that cancer cannot be mastered by such means as drugs, hormones, enzymes, freezing, surgery or local irradiation. For cancer is not a local disease but a premature general process of dying in the organism, a process which is clinically palpable in the various T-reactions. Only that cancer therapy can claim to be valid which goes to the *root* of this biopathy. We are entitled to speak of cancer therapy only if we are actually capable of eliminating the general T-reaction of the organism and of re-establishing the general B-reaction,

that is, normal biological total functioning. If, for example, orgone therapy should succeed in destroying the local tumor and the T-bacilli in the blood; if, on the other hand, it were to achieve nothing beyond that, then we would have a good *symptomatic* treatment for cancer but we would not be entitled to speak of cancer *therapy.*

In character-analysis, we learned long ago not to call a neurosis "cured" when we had eliminated a headache or a compulsion symptom. We speak of "cure" only if we succeed in eliminating the "character neurosis," that is, the characterological and biophysical basis of the local symptoms. This, also, is only possible by establishing orgastic potency, that is, the capacity for full biological pulsation. True, this is a very strict criterion, but the only one in accordance with radical medical and social requirements. This principle governed our work even in the very first years of the Vienna Seminar for psychoanalytic therapy. We shall continue to adhere to it strictly, for we owe very much to it. Our work is not to be confused with all the superficial and illusory methods which call the elimination of a neurotic headache by bromides, or the extirpation of a local cancer tumor, a "cure."

We are already in a position to eliminate local tumors and to change the general T-reaction of the organism into a general B-reaction. But in the individual case, we do not know how long the B-reaction will be maintained, whether, sooner or later, it will not again be replaced by the T-reaction. In other words, *we have not yet mastered the shrinking biopathy.* However, what has been achieved thus far goes far beyond what one could hope for, even only a few years back. I shall now relate how the experimental orgone therapy of 1946 developed from the first groping bion experiments in 1936.

The orgone therapy of cancer goes back to the early observation of the killing effect exerted by the blue PA bions on various bacteria. This led me to observe the effect of various kinds of PA bions on various forms of bacteria, microscopically and in the animal experiment. Microscopic examination showed the following: bacteria, when they came into proximity to vigorous blue bions, would show restless movements and would try to flee from the bions;

if they came too close, they would remain as if paralyzed. The same was true of the T-bacilli. They would adhere to the blue bions motionlessly, or would conglomerate into immobile heaps around them ("agglutination"). The results of the animal experiments have been reported previously: All mice injected with T-bacilli died of acute T-intoxication or from various stages of cancer. All mice injected with PA bions alone remained healthy. Most of the mice injected with PA plus T remained healthy.

These findings disclosed the curative effect of the blue bions in T-bacilli infection. Nothing was known of the possible direct effect of PA bions on cancer tissue. At that stage of the work, nobody knew where the experiments would lead. I brought PA bions together with cancer cells and observed them microscopically. The PA bions surrounded the heaps of cancer cells and finally penetrated the cancer mass, destroying its structure. (*Cf.* fig. 29, p. 392.)

Thus, the PA bions had undoubtedly an effect on the cancer cells. A physician, co-worker of the Institute, offered to persuade a surgeon to undertake an experiment on a patient who was dying of cancer. The surgeon gave her three intravenous injections of sterile PA bions which had been obtained from the blood of a cancer patient. The patient reacted with a rise in temperature. When she died a week later, the autopsy revealed the following: the liver showed a hard cancer tumor the size of a fist. *In several places, it showed a softening to the depth of about 1 cm.* This finding struck the pathologist as unusual. From the point of view of our research, it was only an isolated and not too definite finding, but it was in accordance with the microscopic findings. (I knew that attempts had been made in several places in Europe to treat cancer with injections of streptococci. The bions, however, were sterile forms, obtained by autoclavation.)

I was confronted by two fundamentally different facts: 1. The PA bions paralyzed the T-bacilli which are the basis of the cancer disease. 2. The PA bions also destroyed cancer tissue directly. The first fact pointed in the direction of cancer prevention, the second in the direction of local cancer therapy. In the succeeding years, the first direction became increasingly the more important of the two.

It would have seemed logical and tempting to undertake further experiments with humans, e.g., by injecting them with cultures of PA bions. However, a certain observation on the PA bions militated against it: The PA bions were nothing but a certain kind of living organism. Brought together with T-bacilli, they expended, in their fight against these bacilli, their biological energy. This was shown under the microscope in the fact that the PA bions lost their blue radiation, and that their various forms degenerated into round black cocci, that is, simply, into staphylococci. Thus, the injection of bion cultures in the human was out of the question.

Between the fall of 1937, when the T-bacilli were discovered, and the fall of 1939, when the orgone therapy experiments in mice were first started, there were a number of unrelated but suggestive findings. The blue PA bions killed the T-bacilli which had been injected into mice. When I had the first culture of SAPA bions (in which the orgone radiation was discovered), I was confronted with the important question: *Is this orgone energy which is radiated by the sand bion cultures the same as the energy in the original* PA *bions which I had injected into mice against the T-bacilli?* By now it has become a matter of course that the energy in the earth bions, grass bions, the SAPA bions, the erythrocytes, and the energy visible in the atmosphere are all one and the same form of energy. This identity of the energies in various substances and conditions has since been proved experimentally and has led to important theoretical formulations concerning living functioning. But then, ten years ago, when I observed the first effects of this energy on cancer tissue, without as yet knowing that I was dealing with orgone energy, everything was uncertain. I was inclined to shrink from every new assumption which suggested itself that was at variance with traditional pathology. The observation that the blue color in the PA bions had something to do with their killing effect on T-bacilli was unequivocal; yet, I could not have any idea that this blue was the specific color of the biological plasma energy. Only when, in 1939, the radiation of the SAPA bions was discovered, and with that the solar origin of the orgone was established, did I become more daring in my assumptions.

If I wanted to proceed at all, I had to make the hypothetical

assumption that the blue color in the PA bions represented the same energy as the radiation emitted by the SAPA bions, that is, the energy *outside* the bion vesicles and outside the tube in which the cultures grew.

I had developed a small wart on my left cheek and found that this wart contained T-bacilli. I held the test tube containing the SAPA culture against the wart several times, each time for several minutes. While previously, microscopic examination had shown live T-bacilli, they were now found to be dead. The wart itself disappeared. This experiment—like others—showed that the *orgone energy was effective at a distance, through the glass of the tube.* Similarly, I found live T-bacilli in a small erosion on my tongue. I irradiated the erosion by placing a test tube containing a SAPA culture against it. The T-bacilli soon became immobile, and the erosion healed rapidly. I examined the vaginal epithelium of a woman suffering from leucorrhea and found degeneration of the epithelium and great numbers of live T-bacilli. In addition, there were caudate protozoa with an ameboid motility, the so-called *trichomonas vaginalis.* When, under the microscope, these protozoa came into proximity with SAPA bions, they became immobile. I had the woman introduce a sterile SAPA test tube into the vagina for half a minute at a time. She soon complained about a burning sensation. I immediately re-examined the vaginal secretion and found to my surprise that there were no longer any live T-bacilli. While I was familiar with the rapid reddening of the skin on application of a SAPA test tube, I was nevertheless surprised by the rapidity of this reaction.

In May 1939, the work had to be interrupted as a result of the Norwegian newspaper campaign. The SAPA cultures were taken to New York City by an assistant. The work could not be continued until the middle of September, when the laboratory was re-established in Forest Hills. The first orgone therapy experiments in mice consisted of injecting a solution of SAPA cultures into mice with spontaneous, rapidly growing cancer tumors. The first SAPA-injected mouse was from a Paris strain which had been brought to me by a student, a physician working in a pathology laboratory at Columbia University. The diagnosis was "mammary tumor." I

must say that everybody in the laboratory was rather excited when this first mouse was injected. We were all conscious of the fact that should the tumor recede, this would be a tremendous event. For never before in the history of cancer research had it been possible to reduce a cancer tumor or even to make it disappear.

The tumor was the size of a large bean and hard. On the second day it was softer, and a few days later only the size of a small pea. This was an enormous success, but past experiences warned me not to be overoptimistic.

The layman often has erroneous ideas about such discoveries: he thinks that a man thinks for a long time, finally has a brilliant idea and goes to work; the experiment succeeds, he reports it to the Academy of Sciences, and the Nobel prize is not long in coming. Hard reality is quite different: the discoverer gropes around in the dark for years, takes the wrong turn a hundred times, has to start in again and again; he is proclaimed crazy, his landlord refuses to renew his lease, ignorant physicians threaten to report him to the police; the police ask where he gets his money for his experiments, whether perhaps he is a spy; the Academy, the scientific "authorities," declare the discovery to be a fraud, or else something that has been known all along, or something that has already been disproved, and that the discoverer should not be allowed to stay in the country; thus, a whole laboratory with all the equipment, microscopes, cultures, mice, etc., has to be moved a number of times; all this costs much money, annoyance and sleepless nights; and, finally, the Nobel prize is given for "proper" ideas and findings, and not such "crazy" things as "orgone in sand bions."

My skepticism proved justified. True, the cancer tumor of this first mouse receded from the size of a large bean to that of a small pea. But after two weeks it *began to grow again* until it finally reached the size of a walnut. I did not know whether I should continue with the SAPA injections or not. In the meantime, some untreated cancer mice rapidly became cachectic and died. But *healthy* control mice which had been injected with SAPA bions also died and showed peculiar findings: the liver was enlarged and

showed degeneration of the acini. True, those cancer mice which had received SAPA injections survived the untreated ones by many weeks and even months. But finally all of them died; in some, the tumors had receded, in others it had first receded or disappeared and then had grown larger again. This was depressing: yet, the fact had been established that *the orgone has an effect on cancer tumors.*

In the course of many months, during which over 100 mice were injected, the situation began to clarify itself. At first it remained completely obscure why tumors became again so much larger after having first almost disappeared. Only in a very few mice did the tumor disappear without growing again later.

We did not know in which way the SAPA bions destroyed the tumor tissue. Therefore, all mice which died or were killed were dissected and carefully examined. Did the SAPA bions get into the tumor with the blood stream and destroy the tissue in the same way in which they killed the moving cancer cells on the microscopic slide? The treated mice showed a very puzzling finding: *Neither in the blood nor in the tumor could a trace of the injected* SAPA *bions be found.*

This we did not understand. But we were struck by the fact that the tumors of the SAPA-treated mice were extremely hyperemic (filled with blood). As time went on, it became clear why the tumors, after having become smaller, again grew in size: the secondary growth was due to this hyperemia. There was no doubt: *the blood had something to do with the destruction of the tumor.*

The examination of the blood showed the following: the erythrocytes of the treated mice were taut and biologically vigorous, while the blood of the untreated mice presented the typical picture of cancer: shrunken membrane of the erythrocytes, T-spikes, abundant T-bacilli in the blood and in the culture. The treated mice, on the other hand, showed few or no active T-bacilli in the blood. The striking difference in the form and activity of the erythrocytes suggested that not the SAPA bions, but the erythrocytes were the *immediate* factor in the destruction of the tumor. The SAPA bions transferred their orgonotic charge to the erythrocytes and perished themselves in this process. *The charged*

erythrocytes were the bearers of the therapeutic function at the tumor which originally we had ascribed directly to the SAPA bions.

This assumption was correct and led to new and important observations: The orgonotically strongly charged blood is to be considered the real curative factor. From now on, we consistently applied this principle. Now, we could understand the anemia and cachexia in the untreated mice. True, the treated mice also died, but they never reached the degree of anemia and cachexia of the untreated mice. The explanation is the following: in the untreated mouse, the organism uses up the available biological energy of the erythrocytes in the struggle against the disease; this leads to cachexia. In the orgone-treated mice, the organism, receiving orgone energy from the outside, does not have to use up its own biological energy.

In dissecting several dozen untreated cancer mice, we found that in them, too, the tumor occasionally contained blood-filled cavities. These cavities did not contain any organized or compact cancer tissue. Their content was a macroscopically brownish mass which consisted largely of detritus and T-bacilli. In the dark-field, at 3000x, one could see clearly that the erythrocytes, when they came into contact with cancer cells, not only caused them to disintegrate into T-bodies, but disintegrated themselves into T-bodies. As untreated cancer mice have orgone-*weak* blood, I did not know whether this T-disintegration of the erythrocytes was due to their orgone-weakness or to the struggle against the cancer cells. Later we found the same phenomenon also in the tumors of treated mice; here, too, the erythrocytes disintegrated into T-bacilli where they came into contact with cancer cells and caused their T-disintegration. (This can also be observed in the stained preparation). Now we knew that the T-disintegration of the erythrocytes is a result of their struggle against the cancer tissue, and not of orgone-weakness.

In this way, we discovered the *attempt at natural self-cure of the organism.* This became the guiding line in all future work: *The natural therapeutic factor against cancer can only be the blood.*

The reader should remember that at that time (Winter 1939-40)

nobody had as yet any idea of the existence of the atmospheric orgone. Consequently, there were no orgone accumulators. The orgone therapy in cancer mice was carried out by way of injecting orgone-containing bions. We observed all the injected mice carefully every day. We felt that, while the injected bions destroyed the tumor, they also damaged the mice in some way. Personally, I had always had a strong aversion to the injection of foreign substances, be they drugs or sera, into a living organism. It was only too apparent that so many sedative drugs, while efficacious in alleviating pain, at the same time damaged the autonomic apparatus. In fact, the anesthetic effect of the alkaloids (morphine, etc.) consists exactly in a depression of the vegetative sensibility of the organism. In other words, they have, biologically speaking, exactly the opposite effect of that which orgone therapy tries to achieve: they cause *depression,* and not *stimulation* of living functioning. This is a perennial medical problem: *Are there any drugs which will kill microbes, or pain, without injuring the life system?* Thus far, chemical research has not been able to produce them.

Healthy control mice showed disease symptoms after the injection of SAPA bions; cancer mice, though the tumor was destroyed by the injections, did nevertheless not quite recover. For this reason I tried even in those early stages of the work to get away from the method of injecting bions. At first, however, we saw no other way of administering orgone than by bion injections. But when it was found that the bions acted not directly, but *via the blood,* new ways of orgone application were found. These I shall only mention briefly. They were detours, no more than instructive transitional stages in the orgone therapy experiments and were completely given up later. They were important, however, in that they disclosed essential characteristics of the blood in its connection with the orgone and the malignant tumor. The following indirect methods of orgone application were investigated:

1. The blood-congested tumors of orgone-treated cancer mice were tapped, the blood was withdrawn with sterile precautions and centrifuged. To the resulting serum, sterile SAPA bion culture was added, and it was left in the refrigerator for one day.

Since fluids absorb orgone energy, we knew that the serum would become charged with the orgone from the bions. Then the serum was filtered, that is, the SAPA bions were withdrawn from it. This orgone-charged serum was injected into the cancer mice. In the course of this experiment we could convince ourselves that the blood of cancer mice does not form any specific antibodies against the cancer cells. For the serum of untreated cancer mice did not show the least therapeutic effect. This is explained by the fact that the blood of organisms suffering from cancer is orgone-weak. The serum which had been treated with SAPA bions in the test tube, on the other hand, had a definite therapeutic effect, although it was not as pronounced as that of direct injection of SAPA bions.

2. Healthy rabbits were injected several times with SAPA cultures. When blood was withdrawn from them we found again that it no longer contained any SAPA bions. The rabbit blood was injected into mice, in two different ways. One group of cancer mice received injections of rabbit blood (0.2-0.5 cc.), diluted with KCl, every day for several weeks. The other group received injections of centrifuged blood, that is, orgone-charged serum. This method of indirect orgone application was also successful. Intravenous injection was more effective than subcutaneous injection, but there were several deaths due to the shock effect of the KCl.

3. Injections of orgone-charged rabbit blood or serum *directly into the tumor* were unsuccessful.

4. Injections with *human blood.* This was taken from the arm vein and SAPA bions were added to it in the test tube. Microscopic observation showed clearly how the erythrocytes collected eagerly around the SAPA bions, formed radiating orgone bridges and absorbed orgone. These observations were as instructive as exciting. The erythrocytes became more taut, the blue orgone margin became wider, the radiation (particularly when observed with a blue filter) more intense. Again two groups of cancer mice were injected with blood and serum respectively. The effect on the cancer tumor was pronounced. However, the whole procedure was very time-consuming and laborious.

5. We also tried to make a "T-bacilli serum." Healthy rabbits were injected with very small doses of T-bacilli; after a week, blood was withdrawn and the serum injected into cancer mice. No satisfactory result could be observed, although microscopic observation showed the formation of blue orgone vesicles in the serum when T-bacilli were added. We soon gave up the idea of preparing a specific T-bacilli serum. Attempts to produce antibodies in the blood of mice or rabbits by injecting autoclaved T-bacilli were also unsuccessful.

Among these indirect methods of orgone application, the most effective was the injection of erythrocytes which had been orgonotically charged by SAPA bions. In this case, as with direct injection of SAPA bions, the tumor tissue disintegrated into dead T-bodies, the anemia improved, and the T-reaction of the blood on autoclavation was replaced by the B-reaction.

The table on page 257 summarizes the findings.

Eight of the 27 carefully examined control mice (actually we observed many more untreated cancer mice) died within the first week, that is, about two weeks after the discovery of the tumor at the animal farm. The breeder assured us that he examined all mice once a week, so that the manifest tumor at the time of its discovery could be no older than a week. These mice showed typical cancer symptoms (cachexia, T-reaction, tumor growth, putrid disintegration of the cancer tissue, etc.). In the second week, 5 cancer mice died, and after that, 2 each in the third to seventh week, and 1 each in the eighth to eleventh week. That is, the maximal life span of untreated cancer mice is about 10 to 12 weeks. The *average* span, however, is much less (3.9 weeks), since most of the cancer mice die very soon after the appearance of the tumor.

In contrast, the average life span of the 101 cancer mice treated with direct and indirect orgone application was 9.1 weeks. The average life span is calculated by dividing the total number of life weeks of *all* treated cancer mice by the total number of the mice, the life span being figured from the appearance of the tumor to the date of death. The figure was actually higher than 9.1, because we killed 47 out of the 101 treated cancer mice for a study

Mode of orgone application	Number of mice		LIFETIME AFTER DETECTION OF TUMOR, IN WEEKS																															Average lifetime	Maximum lifetime
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
Injection of bions (SAPA bion cultures, earth bions, etc.)	Died	54	2	2	3	3	3	3	9	3	2	7	1	. .	3	2	1	1	1	1	. .	. .	2	. .	1	1	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		
Injection of orgone-charged blood (from rabbit, tumor, etc.)	Killed for autopsy	47	. .	3	4	5	6	1	4	3	3	4	1	1	5	. .	2	2	1	1	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		
		101	2	5	9	7	9	4	13	6	5	11	2	1	8	2	3	3	2	2	. .	. .	2	. .	2	1	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	9.1 weeks	28 weeks
Orgone accumulator		36	. .	1	3	1	5	2	3	3	2	. .	1	2	4	3	. .	1	1	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	11.1 weeks	38 weeks
None. Untreated control mice.		27	8	5	2	2	2	2	2	1	1	1	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3.9 weeks	11 weeks
Total		164																																								

LIFETIME OF TREATED AND UNTREATED CANCER MICE (1939-1941)

of the orgone effect in the tissues.[1] Only 54 out of the 101 treated mice died spontaneously. In other words, *the average life span of the treated mive was over 2½ times longer than that of the untreated ones.* While the longest life among the untreated mice was only 11 weeks, 2 of the orgone-treated cancer mice lived 28 weeks, i.e., *7 months after the appearance of the tumor.* This is a remarkable result. Since the total life span of a *healthy* mouse is only about 2½ years, and most of the mice were about 5-8 months old when we got them, we succeeded in prolonging the life of these mice by about a fourth of their total life span. In the human, this would mean about 15 years.

These first results were encouraging, even if they were far behind the requirements of a radical cancer therapy. They led one to expect far better results in the human. To begin with, a human cancer tumor is, *in relation to the total body,* far smaller than the tumor in the mouse. The human can report pain or other symptoms which may indicate the presence of a tumor. In addition, there are medical measures (vegetotherapy, forced fluids, iron colloids, diet, vitamins, etc.) by which orgone therapy can be supplemented.

This was the status of the orgone therapy experiments in mice in 1940. I shall not mention the numerous efforts which were made in an attempt to fill in gaps and in trying to achieve better results. Only one major difficulty should be mentioned which later on we encountered again in the orgone therapy experiments with humans: True, it was now possible to destroy tumors by charging the blood with orgone. But the fate of the treated mice depended primarily on *whether and in what manner the dead tumor material was eliminated from the body.* Many mice died not from the tumor nor from T-bacilli intoxication but—according to the saying, "operation successful, patient dead"—from clogged renal and lymph passages or from a gigantically enlarged liver and spleen. These are the organs which have to eliminate detritus from the

[1] It might be argued that, from a statistical point of view, the 47 mice that were killed should not be included in the calculation. Since, however, they were killed at a time when they were about to die spontaneously, their inclusion in the calculation does not materially alter the result.

organism. Especially typical was the clogging of the kidneys. The larger the tumor, the greater was this danger. The mice did not die from cachexia; at the time of death they were not emaciated and still had a smooth fur. They died from the results of the *elimination* of the cancer. This is a gigantic, as yet unsolved problem. If one destroys large tumors too rapidly, the excretory organs become clogged. If one destroys them slowly, other tumors are apt to grow. There is only one answer to the problem: *the tumor must not have grown beyond a certain size.* For this reason, our tests for an early cancer diagnosis from the blood (T-reaction, culture, etc.) are of great importance.

In July 1940 I discovered the atmospheric orgone. A few months later the construction of an orgone accumulator, which concentrates the atmospheric energy, succeeded. Various experiments showed that the atmospheric orgone showed the same characteristics as the orgone in the bions which we had injected into cancer mice. We gave up the injection method, and, instead, *kept cancer mice in the accumulator* for one half hour a day. The very first tests revealed an astoundingly rapid effect: the mice recuperated rapidly, the fur became smooth and shiny, the eyes lost their dullness, the whole organism became vigorous instead of contracted and bent, and the tumors ceased to grow or they even receded. At first, it seemed astounding that a simple cabinet, consisting of nothing but organic material outside and metal inside, should have such a pronounced biological effect. Later on, at a time when this effect had long since become a matter of fact to us, we saw this astonishment in many visitors to our laboratory. They looked for electric wires and complicated mechanical contraptions and could not understand that such a simple arrangement should be capable of influencing cancer.

Statistical studies showed that the results with atmospheric orgone were *better* than with bion injections. Thirty-seven cancer mice were treated in the orgone accumulator. The average life span of the bion-injected mice had been 9.1 weeks; that of the mice treated in the orgone accumulator was 11.1 weeks. The maximum life span with injection was 7 months after discovery of the tumor; with the orgone accumulator, it was about 9½

months. This represented an important step ahead. We had increased the prolongation of life from ¼ to ⅓ of the total life span. In the human, this would correspond to a life prolongation of about 20 years. (True, humans, unlike mice, suffer from severe emotional biopathies which complicate cancer tremendously.)

We were glad not to have to introduce foreign substances into the organism any longer. In addition, the treatment no longer required much preparation and time-consuming labor. The mice were simply left to themselves in the accumulator, and we were free to do other work. This opened a wide vista to a future cancer therapy in the human. If the orgone accumulator should prove effective and at the same time harmless to healthy tissue and healthy blood, one could let healthy as well as sick people use the accumulator in their own homes. In December 1940 the first orgone accumulator for humans was built. I shall describe what measures we took to determine whether or not the atmospheric orgone in the accumulator is in any way harmful to the *healthy* human.

I, myself, had already been studying orgone effects for two years in a Faraday cage with iron walls, which thus acted as an orgone accumulator, spending several hours a day in it. Not only did I not feel any disturbances, but felt a strong vitality. Some workers of the laboratory spent at least a half-hour a day in the accumulator. We had rabbits and mice live in the accumulator for many hours a day, over several months. Except for a certain restlessness, they showed no disturbances. Humans may show dizziness and slight nausea if they stay too long in concentrated orgone, but these disturbances disappear rapidly in the open air.

A special experiment revealed a fact which at first seemed peculiar. We had grass infusions in which protozoa grew abundantly between the second and fifth day. We now put grass infusions into a small orgone accumulator and found that *in these orgone-treated infusions no protozoa developed, or only a very few.* If, however, the protozoa and bacteria were fully developed and the normal grass structure essentially destroyed, the orgone did *not* have a killing effect on the protozoa. This was at first incomprehensible. The blood tests in the cancer mice showed

unequivocally that the orgone treatment in the accumulator charged the blood and made it free of T-bacilli. If, however, we put a culture of T-bacilli in the accumulator, the killing effect was absent. This was analogous to the finding in the grass infusion and was just as incomprehensible.

Finally, consideration led to the following conclusion: The SAPA bions, also, had not had a direct killing effect on cancer cells and T-bacilli, but an *indirect* effect by charging the erythrocytes and healthy tissues. Similarly, the orgone in the accumulator charged the healthy grass tissue, thus slowing up its disintegration into protozoa. When the grass had already disintegrated, when, in other words, there *was no healthy tissue* that could be charged, the killing effect on the protozoa was also absent. In this case, the orgone charged only the protozoa. As we see, the orgone experiments cannot be understood within the framework of mechanistic thinking. In order to eliminate protozoal or bacterial foreign bodies or to prevent their development, *healthy and vigorous orgonotic systems capable of being charged are necessary.* It is a basic law in orgone physics that *the stronger orgonotic system attracts the weaker one and withdraws its charge.* (This is exactly the opposite of the action of the electric charge in which the energy flows from the stronger to the weaker system.) The animal tissue or blood represents a far stronger orgonotic system than the protozoa, cancer cells or T-bacilli. This is why the latter are killed by the former. Under normal conditions, this takes place without orgone being supplied from the outside. But in the process of fighting against the cancer cells and the T-bacilli, the healthy tissues and the blood lose an increasing amount of their orgone; hence the anemia and loss of weight. *If, now, we supply the organism with repeated doses of concentrated orgone, the organism does not have to use up its own orgone.* Then, the anemia and cachexia do not appear or, if already present, are alleviated or eliminated.

The experiment with the infusions was an interesting and important confirmation of this concept of the effect of the orgone on tissues and blood. A great series of important questions, however, still await an experimental solution.

In applying the atmospheric orgone, we ran into the same difficulties as those encountered in the experiments with the injection of bions. Many mice died from the clogging of the excretory organs, although they did not develop anemia or cachexia. This problem will be more extensively discussed in connection with the orgone therapy experiments in humans.

I shall now proceed to a presentation of the orgone therapy experiments in human cancer. I wish to repeat again that we are not dealing here with *final* results, but only with important observations which still contain many gaps, doubts and uncertainties.[2] The more we learn about all the effects of the orgone, the more secure becomes the foundation for a mastery of the cancer scourge, and the more helpers will join in the fight against it.

[2] *Translator's note:* Although the pressure of other work, unfortunately, keeps me from active participation in the cancer research, I have, nevertheless, been in constant touch with it during the past nine years and can claim more than a superficial familiarity with it. On the basis of this, I may say that Reich is far too modest in the presentation of his findings. Every week, some cancer researcher bursts into print with a "great discovery"; every week one hears that the "cause" of cancer, or a "promising therapy" for cancer has been discovered. Yet, every single one of these discoveries is completely forgotten a week—or at most a few months—later. These discoveries are usually nothing but some chemical substance which either causes experimental cancer (although the *reason why* it does so remains undiscovered) or some chemical which is supposed to cure cancer (again without any intelligible reason). This, together with the fact that the mortality from cancer is by no means decreasing, but actually increasing, shows the complete futility of traditional, mechanistic cancer research.

Thus, when Reich points out that his findings are not final, this means only that he is a conscientious scientist. It should not obscure the fact that he *has* discovered the etiology of cancer and opened a way for its cure and prevention. No matter what the headlines are screaming these days, this is one of the greatest discoveries of the century, not to say of centuries.—T. P. W.

Chapter VIII

RESULTS OF EXPERIMENTAL ORGONE THERAPY IN HUMANS, 1941-1945

1. ORGONOTIC CELL LUMINATION: THE THERAPEUTIC FACTOR

To the unprepared reader, the orgone therapy experiments may seem like hocus-pocus. Orgone energy is taken from the air. The cancer patients sit in a simple cabinet made of an outer wall of organic material and an inner wall of metal. There are no complicated contraptions, no wires, no buttons to press, no whirring motors. The orgone energy, with all its far-reaching effects on the shrinking biopathy, does not cost any money. More than that, our Institute has taken steps to prevent any profiteering with this energy. This may sound surprising, "too simple," and "too good to be true." This simplicity, together with the quackery and profiteering going on all around us, will make the reader inclined to strong disbelief. It is imperative, therefore, to give a thorough account.

Physical and biological phenomena show unequivocally that the orgone energy is *concentrated* within the orgone accumulator. Yet, this does not yet explain the therapeutic effect of the accumulator. We shall now try to get a clearer picture of this.

In the first few months of the therapeutic experiments with atmospheric orgone (early in 1941), not many characteristics of the orgone were known. True, it had been made visible, the temperature differences and the differences in electroscopic discharge had been investigated; in other words, the fact of the concentration in the accumulator was established. But the *mechanism of the therapeutic effect* was still obscure. Our preliminary hypothesis was that the concentrated orgone in the accumulator penetrated the naked body and thus charged tissues and blood. In the course of the ensuing two years, observations accumulated which provide a better explanation.

Individual, isolated facts have no scientific significance. It is a common procedure in science to give a certain term to unrelated facts, such as "static electricity" and then to believe that one has understood them. Or one invents an "interpretation" for each individual fact, without any correlation. It is a different thing when the *totality* of many individual facts result spontaneously in *one* concept which is inescapable and necessary and which reduces the many diverse facts into one *functional unity*. If this *one* concept not only explains the functional connection of the diverse facts, if it not only makes superfluous a number of different interpretations and explanations, but, in addition, leads to *new* facts, then we are dealing with a *satisfactory* theory.

Many "practical" people consider theory formation a "philosophical pastime." In reality, theory formation is not a luxury, but a scientific tool comparable to the arrangement of the instruments before an operation. This arrangement is as decisive for the success of the operation as each individual instrument itself. The best surgeon would fail if the instrument for each manipulation first had to be looked for all over the room. As in the arrangement of tools, so one arrives in theory formation from a less satisfactory to a better *arrangement* of facts. Consequently, such theories can never form a finished system, but will always be incomplete and in need of improvement. This is also true of the following presentation of the therapeutic effect of the orgone accumulator.

The initial hypothesis that the orgone in the accumulator simply penetrates the organism left a number of facts unexplained. Many patients reacted to the orgone immediately; others needed a number of irradiations before they showed any reactions. Now, if the effect were due simply to a mechanical penetration of the organism with orgone particles, all organisms would react in the *same* way. The fact that this is not the case calls for an explanation.

The assumption that the organism is being penetrated by the orgone while the organism itself remains passive and does not participate in the process, was taken over from the process of irradiation with radium or Xrays. In this case, it is a matter of irradiation with non-biological, that is, *body-alien* energy: the

organism emits neither Xrays nor radium rays. The atmospheric orgone, on the other hand, represents a *body-own, specific biological energy:* the body continually takes it up from the sun and the air, contains it in all its cells and constantly radiates it. If, now, an organism is in the orgone accumulator, *two orgonotic systems establish a functional relationship with each other.* Today, this is an established fact, but six years ago I did not know it. In order to understand the functional relationship of two orgonotic systems, we have to go back to the observations made in bions which have been described earlier.

As we have seen, an erythrocyte and an earth bion each form an orgonotic system. Biophysically speaking, such a system consists of an *energy nucleus,* a *plasma periphery,* and an *orgone energy field* around the organism:

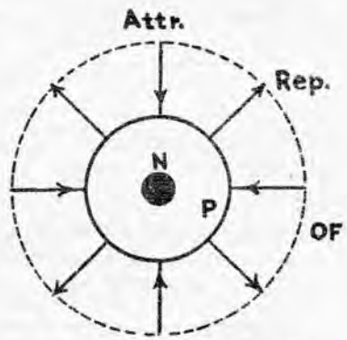


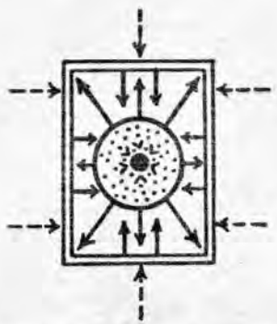
Fig. 15. Diagram of living "orgonotic system"

N: biological nucleus.
P: plasmatic periphery.
OF: orgone energy field.
Attr.: orgone charge.
Rep.: orgone discharge.

When two orgonotic systems come close to each other, the two orgone energy fields establish contact. The immediate result of this orgonotic contact is mutual *excitation and attraction.* This is expressed in the fact that the two orgonotic systems approach

each other. For example, the erythrocytes group themselves around the heavier and less mobile earth bion. If they come close enough, a radiating bridge of orgone energy is formed. At this point, the biological nuclei of the orgonotic systems begin to radiate more strongly. We call this phenomenon "orgonotic lumination." It is the same phenomenon which traditional biology has observed in the process of cell division and has termed "mitogenetic radiation." All fundamental bio-energetic processes, like sexual excitation, orgasm, cell fusion and cell division are accompanied by a high bio-energetic excitation, i.e., by *orgonotic lumination.* It is a matter of the liberation of large amounts of energy in the living substance. The "sexual contact" between two organisms which strive toward the sexual act is, orgone-physically speaking, nothing but the formation of a radiating orgone bridge and orgonotic lumination in the two orgonotic systems. Many investigators (in this country, e.g., Burr) have demonstrated an energy field around living cells or metazoal organisms. They hold it to be an electromagnetic field. Orgone physics demonstrates the fact, however, that this energy field around the organism has nothing to do with electromagnetism: it is an *orgone energy field,* i.e., a field of specific biological energy. It functions at a distance, without contact of the material body surfaces. My experiments with the oscillograph and the orgone field meter show not only that such an energy field exists, they also show that in different people it extends to different distances; according to observations to date, from a few centimeters to four meters. In addition, the orgone field varies in one and the same individual; it becomes wider and narrower, i.e., it expands and contracts. These functions of the energy field depend on the emotional state of the organism. The field extends considerably in a state of orgonotic cell lumination.

In other words, as far disparate as may seem the connection between erythrocyte and earth bion on the one hand and that between the orgone accumulator and the organism in it on the other hand, it is the same phenomenon. With this difference: In the first case there is a radiating bridge only at the contact surfaces; in the case of the orgone accumulator, however, *the orgone energy field of the non-living orgonotic system completely envelops the energy field of the living orgonotic system.* This can be graphically presented in the following diagram:



Contact of the orgone energy field of the organism with that of the orgone accumulator (solid arrows). The dotted arrows indicate the attraction of the atmospheric orgone. Effect: Lumination of the organism.

What are the facts which substantiate this assumption? The main facts are the following:

1. The effects of the orgone accumulator are far weaker or even absent if its inner walls are at a greater distance from the organism than about 4 inches. Ignorance of this fact caused a whole series of therapeutic failures. The effect in mice was poor when they were treated in large accumulators built for humans; it was far better when we used small accumulators of about 1 cubic foot. Now we use accumulators with three layers and only five inches long and wide for the treatment of mice. A small boy of four, suffering from bone cancer, reacted poorly compared with adults suffering from the same disease; we had used a large accumulator designed for adults. We often hear the objection that if there were such a thing as an orgone effect, electrophysicists who work in Faraday cages would have noticed it. The point is, a wire cage of many square meters is not a biologically effective orgone

accumulator. I personally can stay far longer in the Faraday cage (which is about 2 x 3 meters) than in a therapeutic accumulator (which is about 2 x 2½ *feet*) without noticing any effect.

2. Orgonotically *lively* individuals feel the orgone effect in the accumulator much more quickly and intensely than vegetatively *sluggish* individuals. The former have a wider orgone energy field than the latter. Consequently, they establish a contact between their body energy field and the field of the metallic accumulator wall far more easily and quickly.

3. Orgonotically sluggish individuals usually do not feel the orgone effect in the accumulator until after a number of sessions. This admits of only one explanation: the organism first has to be passively charged to a certain degree so that the body orgone radiation becomes stronger, before they feel it. A physician friend who occasionally used the accumulator was unable for months to feel the typical sensations of prickling and warmth. Only when he began to use the accumulator more regularly did these sensations gradually appear. That is, at first his organism remained passive, but later it "reached out," as it were, toward the orgone field of the metal wall.

4. The inner metal walls of the accumulator are cold to the touch. However, if one holds one's palm at a distance of about 4 cm. one feels after a while a sensation of *prickling* and *warmth*. (The objective differences in temperature have been discussed in Chapter IV.) We must assume that the sensation of warmth is the subjective result of the impact of the orgone particles on the skin. This fact is of great importance for an understanding of the sensation of warmth with orgone irradiation.

In 1942, a phenomenon was discovered which has a decisive connection with the body lumination in the accumulator: *the body temperature increases in the accumulator*. This temperature rise is of different magnitude and occurs more or less rapidly in different people. If the body temperature before the irradiation is subfebrile (near the fever limit), it rises above this limit in the accumulator. That is, the orgone creates a mild fever.

Fever is known to be a basic reaction of excitation of the cells and the blood. Its nature has hitherto not been understood. The

temperature rise in the accumulator points to an orgonotic lumination. Just as the contact of two bions results in an orgonotic lumination, so too does the contact of the blood and the cell system with the orgone field of the accumulator. The contact of the two orgone systems leads to an increase of the *orgone energy metabolism* in the organism; to this, the vivifying effect of the orgone therapy must be ascribed. The essential phases of the process are: energy-field contact, penetration, cell lumination and increase in energy metabolism. They are identical with the typical phases of basic biological processes such as copulation and conjugation. That is, in orgone therapy we are dealing with processes of sexual energy in a strictly biophysical sense. This explains why so many patients who suffer from a standstill of their biological energy metabolism develop sexual excitation and sexual stasis under the influence of the orgone treatment. This aspect will be further discussed in connection with individual case histories.

The repeated luminations of the organism caused by the orgone accumulator show themselves also in such findings as that the erythrocytes gradually show an increase in biological energy, thus becoming capable of radiating more energy and killing cancer cells and T-bacilli, things which previously, in an orgone-weak condition, they were not capable of doing. If fever is correctly conceived of as an increased bio-energetic activity of the organism, orgone therapy could also be called a natural fever therapy. From this standpoint, many therapeutic methods which have thus far been employed purely empirically, without being understood, become understandable. The malaria therapy against progressive paralysis which my teacher Wagner-Jauregg developed, is nothing but an artificial stimulation of strong cell lumination by way of injecting malaria parasites. The therapeutic factor consists in the cell lumination thus brought about. The "rum toddy" in colds and the hot compresses for pain also belong here. We are confronted by the task of comprehending the effect of many drugs from this standpoint. Thus it will be possible to distinguish the beneficial from the harmful drugs. A drug which, though it kills bacilli, damages at the same time the blood cells

and plasma system instead of invigorating them, should not be tolerated, powerful profit interests notwithstanding. It can be nothing else but the orgonotic lumination in the organism which alleviates or eliminates pains of all kinds. (The rapid alleviation or elimination of pain in the orgone accumulator is an everyday observation.)

Based on the observations to date, I consider the cell lumination which the orgone accumulator brings about the real and essential therapeutic factor. This cell lumination has the same destructive effect on cancer cells and T-bacilli as the orgone radiation of the SAPA bions which we can observe under the microscope and which we have filmed. Further experiments with different arrangements of materials has vastly increased the effectiveness of the orgone accumulator. It is desirable to be able to shorten the individual treatment sessions and to effect a greater rise in body temperature.

The first cancer patients who were subjected to the orgone experiment were accepted by the Orgone and Cancer Research Laboratory only provided that their physicians had no objection to the experiment and provided that the relatives of the patient signed a statement to the effect that they had brought their relative because the physicians in charge considered the case hopeless and because they had heard of my cancer experiments in mice and humans; that they recognized that orgone therapy in cancer was still in an experimental stage; that I had not made any promise of cure and was undertaking these experiments without charge; that they had been told that the disease might result in abscesses or death regardless of the treatment, and realized that such an outcome could not be ascribed to the experiment.

I shall emphasize the disappointments and failures. It is most important for us to prevent the impression that we possess a cure-all, a means of "curing" cancer under all circumstances. If one is to develop the beneficial effects of the orgone, an understanding of the *failures* is indispensable. The following examples will illustrate the difficulties and failures.

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Case M. F. A 57-year-old widow came to us with numerous tumors, localized mainly in the cranium and the bones of the

arms. She was compulsively religious and suffered from hypochondria and masochistic complaining. Seventeen years previously, her uterus had been extirpated because of tumors. Two years previously, she developed pains in the neck, the scalp and the lower back. She began to suffer from insomnia and lost her appetite. It was difficult to distinguish her hypochondriacal complaints from her complaints about acute cancer pains. Her skin was pale and livid, her hands and feet cold and clammy. She was able to walk only with support. The hemoglobin content of the blood was 33%. The blood tests for cancer were all positive: growth of T-bacilli, T-reaction on autoclavation, rapid shrinking of the erythrocytes in NaCl. The tumors at the cranium were palpable and hard. The diagnosis of cancer had been established at Memorial Hospital. For 8 weeks, the patient came daily for orgone treatment. The hemoglobin content on the third day was 41%, on the sixth day 55%, on the eighth day 85%. It remained at that level for 4 weeks, then dropped to 78% and remained at about that level. The T-reactions remained positive for about 3 weeks. After 4 weeks there were no longer any T-bacilli in the blood, but the T-disintegration of the erythrocytes, which had been almost 100% at the start, was still about 35% after 7 weeks.

The tumors at the cranium became appreciably smaller and softer. The patient developed nose bleeds; the blood was of a brownish color and contained typical tumor material. The pains decreased, sleep and appetite improved. The patient became fond of the orgone accumulator and wished to have one in her home so she would not have to make the long trip every day. I had to refuse her wish, because there were as yet too few observations of the effect of the orgone on human cancer.

After two months, the patient developed tensions in the deep adductor muscles of the thighs. She seemed to develop an aversion to the accumulator which at first I did not understand. This was at about the same time that another patient, whom I have described previously, reacted to the orgone radiation with sexual stasis. The same thing had occurred in this patient: the orgone accumulator had charged her sexually and she reacted to it with spasms of the adductor muscles. Her hypochondriasis became

more acute. She had no cancer pains, but she became very petulant. Her relatives could not stand her behavior and sent her to a home for the aged. Thus, the orgone therapy experiment came to an end. Another series of Xray pictures showed a definite reduction and calcification of the tumors. The cancer therapy was complicated by the patient's neurosis. After a few months of definite improvement, the patient died. All that the orgone therapy was able to do was to prolong her life for a number of months and to reduce her pains. This patient, too, presented the picture of complete resignation in life. The relatives had noted this also. Her nephew told me one day, "She has nothing to live for." One had definitely the impression that the patient died because her "life instinct" had never functioned properly and her life system had shrunk as a result of a complete lack of joy in life.

Case C. K., 33 years. This patient was under treatment for a colostomy which had been done for a cancer of the colon. The patient related that she had always been constipated, even as an infant. She also had always been anemic. During the summer of 1939, "dysentery" always set in at the time of the menstrual period; this had continued to date. During 1940, there were intestinal hemorrhages. For many months, the patient had been suffering from excruciating pains in the rectum, for which she constantly used suppositories; as they never worked for long, she also took codein tablets.

The patient first came to the laboratory on May 7, 1941. She was in a hopeless condition. Her cachexia was far advanced; in spite of being tall, she weighed only 115 lbs. It was immediately evident that she suffered from a severe sexual biopathy. Her expression was anxious. She suffered from anxiety dreams. Her husband had died 8 years previously. Since then she had lived in complete abstinence. During the marriage, also, she had had no sexual gratification, since her husband was always sick and "too weak to pay attention to that." Her colostomy increased her nervousness; she thought she would faint when she passed gas without being able to control it. Her insomnia had existed long before her cancer. In her anxiety states she had spasms in the throat and the anus and "thought she would die." Her case had

been diagnosed as cancer by several private physicians and by the hospital.

The tests revealed the following: Hemoglobin 72%; on autoclavation 99% T-reaction, confirmed by Gram stain. The erythrocytes were pale, with narrow orgone margin. They degenerated slowly but with definite T-spike formation. Culture from the intestinal contents: T + + +, numerous rot bacteria, formed cancer cells, including ameboid forms.

Two days after the beginning of the orgone radiation, the hemoglobin increased to 82% and stayed at that level. After about 2 weeks, the blood picture showed a definite improvement. In the intestinal contents, only very few fully developed cancer cells could be found, but there were masses of destroyed cancer cells and immobile T-bacilli. After 4 weeks, the autoclavation test of the blood revealed a T-reaction of only about 5% (as compared with the original 99%), that is, a B-reaction of 95%.

As early as the fifth irradiation, the pain decreased considerably. She managed a whole night with only one codein tablet, which she had never been able to do, and was able to sleep. After the 12th irradiation she stopped using rectal suppositories regularly, and in the succeeding 6 weeks she used them only twice. She also no longer took any codein. Her appetite improved, but she failed to gain weight.

Examination of the rectal discharge on May 29th showed the absence of formed cancer cells and the presence only of cancer detritus and immobile T-bacilli. The excretion was no longer gray, but brownish, which pointed to disintegrated blood from the tumor.

After the 12th irradiation, *itching of the anus* appeared. The patient perspired freely in the accumulator and was no longer pale. She continued to be free from pain, slept well, re-established social contacts, etc.

She continued the treatment until July 28, 1941, continued to be free from pain and to feel well. Then she stopped coming. In the middle of September she called on the telephone and said she still felt well, but that she could no longer come for treatment. I wrote the relatives that I would have to decline all responsibility

for the patient's fate. It turned out that her neurosis kept her from coming. Since puberty, she had been suffering from a severe claustrophobia which recently had become intensified; this prevented her from taking the subway to come to the laboratory. Her relationship with her relatives was extremely bad. I often had the impression that their intense unconscious hatred made them hope for an early death of the patient. They had no time for her and showed her so openly that she was a burden to them that she no longer dared to express the wish to be taken to the laboratory by car. I knew that she was lost but there was nothing I could do. The familial situation could not be changed, and I could not make up my mind to give the patient an accumulator for her home, because her physician showed a hostile attitude, even though on May 24th he had admitted the patient's improvement to her brother. At the beginning, he had threatened me with reporting me to the police and had refused to give her case history. During the summer of 1942, I heard that the patient had died a short time previously.

Her death was a clear case of shrinking death. The orgone treatment had prolonged her life for about a year and had greatly alleviated her condition. But her case showed again the extent to which the orgone therapy is dependent on social and familial circumstances.

Open questions in the orgone therapy of cancer. Orgone therapy will be able to eliminate a series of cancerous affections or to prevent their development, but by itself it will never be able to conquer the cancer scourge. Orgone therapy is only one of the necessary measures in the fight against the biopathies. Orgone can charge tissues and effect an expansion of the vital apparatus. But when the social milieu constantly forces the organism into contraction, resignation and shrinking, the application of orgone is like trying to fill a barrel without a bottom.

We have to distinguish the problem of the orgone application from that of necessary social measures. To the practising physician, the orgone therapy will be of first importance. But he must never lose sight of the social causation of the biopathies, if he is going

to treat the human organism as a product of biological *and* social factors.

Compared with the methods of radium and Xray irradiation, the orgone therapy of cancer offers several advantages. True, Xray irradiation is capable of inhibiting the growth of a tumor temporarily. But this method of treatment is accompanied by a general biological weakening of the organism. It impairs the appetite and produces nausea and vomiting. Its effect is only local; it does not affect the underlying shrinking biopathy. The results of local radium therapy are better, but they are also local and do not touch the biopathy. The surgical removal of a tumor, it is true, has a radical local effect, but it does not prevent the formation of metastases and also does not touch the general process.

Orgone therapy, on the other hand, offers the enormous advantages of applying a body-own energy and of reaching every part of the body. The orgonotic charging of the erythrocytes has, simultaneously, two most important effects: *expansion of the organism and development of the organism's own defense reactions against the T-bacilli intoxication.* For this reason, the usual result is that the appetite increases, the loss of weight is checked or is replaced by increase in weight; nausea and pains diminish or disappear and the biological blood reactions become more vigorous. The tumor is not destroyed immediately. What happens first is an invigoration of the blood. Only when the general biological invigoration has reached a certain degree does the attack of the blood on the tumor and the T-bacilli set in. For this reason, the excretion of liquefied tumor masses does not set in until several weeks after the beginning of the treatment. Similarly, the T-cultures in the blood do not become negative until after several weeks. In many cases of biologically debilitated blood and severe anemia, the attack on the tumor is preceded by the formation of a great number of young erythrocytes, as can be observed microscopically. Breast tumors disappear in the course of 2 to 3 weeks.

Observation to date shows that the tumors always become soft, no matter what their localization. While this is highly gratifying in itself, the cancer therapy becomes complicated exactly by the

destruction of the tumor in those cases where the products resulting from its disintegration cannot be absorbed or eliminated. We had encountered this problem before, in our mice. What happens is this: Orgonotically strong blood goes into the tumor; the tumor tissue disintegrates. Cavities develop which may even enlarge the tumor. These cavities contain a brownish, non-putrid liquid. This consists of enormous masses of inactive T-bacilli, as the microscopic study of the excretions shows. The fate of the patient depends largely on whether these enormous masses of disintegration products can be eliminated from the organism or not.

In one case of brain tumor the destruction of the tumor occurred as early as two weeks after the beginning of treatment. The eye symptoms and the intracranial pressure receded. But the detritus from the tumor filled and clogged the lymph glands of the neck and the patient died—according to the report of her physician—of *suffocation* due to glottis edema.

Another woman with a tumor of the stomach the size of an apple, also reacted rapidly to the orgone therapy. The tumor, which was palpable, became soft and became rapidly smaller. But after 8 weeks the kidneys became clogged: There was edema of the legs and the patient died of cardiac decompensation. In this particular case, the elimination of the products of disintegration through the intestines would have been possible in principle. But the patient suffered from chronic constipation. As a result of this, the intestines could not manage the elimination and the organism attempted it by way of the blood stream.

Similarly, a third woman, with ovarian tumor, who had reacted to the orgone therapy with an improvement of her general condition and with a decrease in size and a softening of her tumors, died of kidney complications.

In a boy of five with an adrenal tumor and metastases in the spine, Xray showed calcification of the bone defects after 4 weeks. The primary adrenal tumor was no longer palpable after 2 weeks' treatment. However, the boy suddenly developed a flaccid paralysis of the legs. He died later of enlargement and degeneration of the liver, apparently due to the process of elimination of the dissolved tumor mass.

Enlargement of the liver with degeneration of the liver cells and clogging of the kidneys seem to be the most frequent and typical sequelae of the destruction of the tumor unless the destroyed tumor mass finds a ready outlet to the outside (the body surface, through the intestines, the bladder, etc.). We have as yet no answer to this difficulty. To say that the tumor should not be allowed to grow to such a size that this complication is likely to happen is correct but unsatisfactory. It should be possible to find ways and means of dealing with these secondary manifestations in cases that come for treatment at an advanced stage. The fact should be remembered that *none* of our cases came to us shortly after the discovery of the tumor. They all had tried other methods for several years, and when they came to us, they had been given up as hopeless and were on the point of dying. That is, we do not know whether most of the tumors could not be eliminated without such secondary manifestations if the cases came to us *immediately after the discovery of the tumor*. Much smaller tumors, of course, would result in much less detritus, and the danger of the clogging of the excretory passages would be much less.

A fact which needs special emphasis is that the biological strength of the blood cannot be judged by the hemoglobin content. We have seen cases with 80% hemoglobin who, nevertheless, gave a 100% T-reaction on autoclavation. In other words, the biological resistance of the blood, as indicated by the T-reaction and B-reaction, is essentially independent of the iron content of the blood.

I shall have to mention briefly a few *sex-economic aspects* of the orgone therapy in cancer; they are of utmost importance. We know that sexual resignation is in the background of the cancer shrinking biopathy. All patients show a striking *lack of libido*. The orgone therapy results in an alleviation of pain and the orgonotic charging of the blood system. In many cases, this leads to a re-awakening of sexual excitation. If the sexual repression and the armoring is very intensive, the patient does not perceive the sexual excitation. He expresses it in a manner which is comprehensible

only to the sex-economist: acute anxiety, genital spasms, spasms in the pelvic and thigh musculature, or simply in flight from the "weird" orgone irradiation (this occurred in 2 cases). In other cases, where the sexual life was not altogether extinguished, where sexual intercourse still took place occasionally (although, of course, without orgastic potency), access to the difficulties is somewhat easier. Here, the sexual disturbance is more often due to ignorance and takes the form of harmful practices and inhibitions.

There was, for example, a man with cancer of the rectum. When his general condition improved, he developed pain in testicles and sperm ducts. He ascribed these pains to the cancer. But recognition of their stasis character made it possible to eliminate them. His wife refused sexual intercourse. He was too ill to obtain gratification elsewhere, and he would not have thought of masturbation. In a talk together with his brother, who was very understanding, he realized that his pains were due to sexual stasis and that no other way than masturbation was open to him. After a short time, he was again free from pain.

Another patient with cancer of the urinary bladder sporadically developed violent pains in the pelvis; these pains were of a different character from those caused by the tumor *before* the orgone treatment. I tried to clarify the sexual situation. It turned out that the man had not had sexual intercourse with his wife for the past 15 years, and no other sexual gratification for the past 5 years. Whether this sexual stasis had anything to do with the appearance of the bladder cancer I cannot say, but it is highly probable. I discussed the situation with him and he understood that he had to get rid of the sexual stasis. This eliminated the pains so rapidly that the connection could not be doubted for a moment.

All the more incomprehensible is a medical attitude which a reviewer expressed in connection with a similar case described in the first issue of our Journal: "One may reasonably object to the recommendation to practice masturbation in order to achieve relaxation of the genital apparatus." "Reasonably?" Why? There is, in fact, not a single rational argument against this measure.

More than that, the pains and other stasis symptoms in the sexual apparatus in cancer patients deserve a great deal of attention, as these two cases—and many others—show very clearly.

By far the greatest obstacle to the orgone therapy of cancer is its general biopathic basis: the shrinking of the total autonomic life apparatus ("shrinking biopathy") goes to the roots of living functioning. The reader will be aware of the significance of the findings in the case described first: the organism underwent a process of shrinking *after* the local tumors were eliminated. This finding shifted the whole problem from the local tumors to the general shrinking process. But here we no longer deal with biological problems alone, but predominantly with social and sex-economic problems. It is too early to say whether and to what extent orgone therapy can counteract the general tendency to shrinking. It will be essentially a question of whether and to what extent one can improve the general sex-economic way of living.

Up to now, I have only reported on the difficulties of the orgone therapy and the obstacles which stand in its way. I shall now proceed to the positive achievements. They are unequivocal and gratifying.

Case S. T., 42 years old. This patient came for treatment on April 30, 1941. In February, 1938, her left breast had been amputated for cancer. Two months after discharge from the hospital, tumors appeared below both knees. They were very painful and the patient could hardly walk, so that she kept to her bed most of the time. Even before her operation, she had suffered from "rheumatic" pains in her legs and the big toes had felt "numb." For years previous to the operation she had been suffering from pulling pains in the arms, fingertips and neck, from headaches, "dizzy spells" and chronic constipation. She had had five premature deliveries and three spontaneous abortions. Menstruation had ceased 6 months before she came, as a result of the Xray treatment. The tumors at the knees grew slowly but steadily in size. The pains were always worse in bad weather. Her arms were so weak that she often would support one arm with the other in lifting some object. Since the operation, her left arm was swollen and painful.

We have here the typical history of a biopathy. Examination confirmed this. The whole musculature of the neck was hypertonic. The thorax was in chronic inspiratory position, expiration was severely inhibited. The neck was held in a rigid attitude of spite. The abdominal musculature was rigid and could not be pressed in. The tumors at the knees were the size of a walnut.

Blood tests: Hemoglobin 80%; autoclavation test and Gram stain showed a T-reaction of about 40%. T-cultures were + + +, with numerous rot bacteria. The erythrocytes were pale, with narrow orgone margin, but without T-spikes. They disintegrated in about 5 minutes.

Vaginal secretion: T-bacilli + + +, microscopically numerous rot bacteria and T-bacilli.

On May 4th, that is 4 days after the beginning of the treatment, she was able to walk better. The feeling of numbness in arms and legs disappeared. On May 6th, her physician found that the tumors had become smaller and advised her to continue the treatment. The patient wrote to her son about her striking improvement. She no longer kept to her bed but was up and around and did small errands. On May 7th, the tumor at the left knee had disappeared, that on the right knee was barely palpable. Her biological reactions in the accumulator became more intense, she began to perspire freely. That is, she developed vagotonic reactions. Her weight remained constant, at 173 lbs.

Xrays: When the patient came to us (April 30th) her bones showed numerous small shadows, particularly in the pelvis. On June 20th, the Xrays showed a far-reaching disappearance of these shadows, particularly in the pelvic bones. The findings at the knees were *negative.*

The patient continued the orgone treatment until December 1941. During that time, she was practically free from pain, no longer took morphine preparations, did not lose weight, and did her housework. In January 1943, she was still well. It is impossible to say when the disease process will again set in. She had the orgone treatment for only about half a year and did not have an accumulator in her home.

Case F. H., 45 years old, came to the laboratory on April 19,

1941. He was unable to take solid food, and even liquids only with difficulty, by the teaspoonful. In the course of a year, he had lost 25 lbs. He suffered from a diaphragmatic tic ("hiccups"), insomnia, and tired very easily. The diagnosis of his physician was *inoperable carcinoma of the esophagus,* almost complete obstruction, as shown in the Xray. The epigastrium was tense, the patient suffered from severe constipation. The thorax did not move properly with respiration. The weight was 144 lbs.

Blood tests: Hemoglobin 70%. T-culture + + +, T-reaction 95%. Erythrocytes with T-spikes immediately disintegrated bionously, but changed into small erythrocytes with homogenous plasm.

There was an immediate and strong reaction to the orgone radiation: warm perspiration, redness of the skin and sensation of heaviness in the head after 20 minutes.

On April 28th, the hemoglobin was 85% and remained at this level during the following months. During the same time, the patient gained about 5 lbs. and became able to swallow soft foods without difficulty. On May 9th, the *T-reaction* was no more than 10%. The choking sensations disappeared, the patient slept well and was able to work without getting easily fatigued. The skin became tanned. The patient was very much relieved and grateful. Although in this case, too, a relapse is possible, the fact is remarkable that in January 1943, the patient was still well and working. The orgone therapy lasted only about 12 weeks.

Summary: 13 cases of cancer diagnosed at hospitals and previously treated with Xrays, and 2 cases diagnosed by myself were treated and observed until 1943. All were in advanced stages of cancer cachexia. In all of the cases, the pain was greatly alleviated and the use of morphine preparations reduced or eliminated. In all cases, a decrease in the size of the tumors and an improvement of the general condition was observed. Breast tumors disappeared in all cases.

In 4 cases, calcification of bone defects was shown by Xrays. In most of the cases, destroyed tumor substance was eliminated. In 3 cases, the orgone therapy did not prolong life. In 6 cases, it prolonged life by about 5 to 12 months and made the last few months of life much more tolerable. In 6 cases, the process of

shrinking was stopped. In 6 cases, patients became able to work again. Five of the inoperable cases, otherwise doomed to an early death, are alive and in good or at least tolerably good condition two years after treatment. These results were encouraging and obliged us to continue the work, even if they were far from satisfactory. However, compared with the condition of the patients previous to the institution of the orgone therapy, the results were even *astonishingly good*. The problem of the elimination of the destroyed tumor masses remained essentially unsolved.

These results not only confirmed the fundamental correctness of the bion research, but they also formed the point of intersection at which the T-mice experiments, the orgone blood tests, the formula of tension and charge, and the findings of orgone biophysics were shown to be correct and of practical significance.

2. SIX YEARS' EXPERIENCE WITH PHYSICAL ORGONE THERAPY IN DISEASES OTHER THAN CANCER

It is time to give a brief summary of some of the results which I had with physical orgone therapy during the past six years in other diseases. The experiences are sporadic. The main effort was directed toward cancer. But here and there I could see therapeutic effects in cases of angina pectoris, arteriosclerosis, varicose ulcer, common colds, etc., effects which deserve to be registered, though many more experiences must be made, before a trustworthy judgment can be secured. As amazing as some of these therapeutic results, as great is the mystical expectation which any kind of new therapy arouses in people. They expect to be cured of any conceivable disease or even to get paradise on earth, without any effort. Orgone therapy is far from entertaining or nurturing such mystical expectations. It works with an energy which has been discovered only a few years ago and which calls for further research along many lines. This calls for caution. Medical men, insofar as they honestly fulfill their therapeutic function, are so disillusioned by the noisy propaganda of the pharmaceutical industry and so sceptical of new kinds of "therapy," that a genuine new therapy finds it difficult to gain their confidence. There is, in addition, the impotence of medicine confronted with

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the biopathies, the diseases of the autonomic life apparatus which cannot be treated with chemicals. Orgone therapy, on the other hand, has proven its efficacy precisely in these diseases.

Physical orgone therapy is applied in three different ways:

1. Application to the total organism in the orgone accumulator:

The patient sits in the orgone accumulator once or twice daily, with or without clothes, for a period of from 15 to 45 minutes. As explained before, strongly orgonotic individuals feel the effect after only a few minutes; individuals suffering from anorgonia will take an hour or more before they feel the sensations of heat and prickling. The full therapeutic effect appears only with *regular, daily* use, in anorgonotic individuals not until after several weeks of use. Individuals with a shrunken orgone energy field feel nothing at all at first. To the extent to which the organism becomes charged it becomes more sensitive to the orgone and begins to perceive the diverse sensations.

The signs of a full reaction of the organism to orgone therapy are the following: Sensations of heat; reddening of the skin, particularly in the face and the neck; sensations of prickling and tingling; objectively measurable rise in body temperature; disappearance of tensions and pains.

The total irradiation of the organism in the orgone accumulator showed the following results, if the accumulator was used regularly over a period of months:

Anemias were eliminated within three to six weeks. This effect on the blood is one of the best-established findings. The disappearance of the anemia is accompanied by a much better blood circulation in the skin. The skin becomes tanned and no longer feels clammy or leathery.

In almost all cases, the disposition to "colds" is greatly reduced; colds are much less frequent and much less severe. It is certain that "colds" have much to do with the atmospheric orgone conditions.

During grippe epidemics it was often possible, by means of intensified orgone therapy (irradiation several times daily), to nip the disease in the bud. During the epidemic in the winter of 1945,

for example, I was taken ill for only about 12 hours, with a temperature of not over 100° F. A number of users of the accumulator reported that their attack of grippe was very short and not severe. The significance of these findings for the prevention of pneumonia in the case of severe grippe is obvious.

A very promising effect of the orgone is the lowering of the blood pressure in vascular hypertension. This is explained by the vagotonic effect of the orgone. This effect was observed in 4 cases only and needs further elaboration.

Orgone radiation has shown remarkable effects in conditions of "weakness," that is, in anorgonotic attacks in the sense of orgone biophysics. Where the anorgonia was accompanied by symptoms indicating a tendency to carcinomatous tissue disintegration, orgone therapy achieved decisive results in almost all cases. This was shown particularly clearly in the changes in the biological blood tests from a T-reaction to a B-reaction.

In the beginning of my experiments, some years ago, I had felt that while the orgone has a strong influence on the tissues and the blood system, it could have no effect where structural changes had already taken place. I felt, therefore, that it could not be effective in cases of arthritis with marked structural changes. In the summer of 1944 I was called to an old man in a Maine town. He suffered from severe arthritis which had kept him in bed for several years. His knees were fixed in a bent position; he could not walk, but only shove himself along with stiff knees. His fingers were stiff and showed the typical arthritic deformations. He was pale, thin and anemic. When I saw him, I felt strongly disinclined to undertake any therapy. In spite of everything, the family asked me to make an attempt. I told them explicitly that I did not see any hope, but that they could try if they wanted to. A single-layer orgone accumulator was sent to his house, free of charge. For several months, I heard nothing. In the course of the following winter, I heard that the patient felt much better and stronger, that he had developed a good appetite and occasionally left his bed to walk about in the room. Again I heard nothing until the summer of 1945. When I came again to Maine and visited the family, I felt unwilling to believe what I heard and saw: The old

man no longer kept to his bed, but walked around with very little restriction of motility; his face was no longer pale but had a rosy color. I learned that a few weeks before he had begun really to walk about, no longer suffered from constipation or loss of appetite and generally was in a good humor. The man began to cry when he saw me. I would like to say emphatically that this could not be a matter of suggestion.

First, suggestion cannot influence a severe arthritis.

Second, I had seen the patient only once for a brief time and had said explicitly that I did not believe in the possibility of a cure.

Third, I had had no contact with the patient for almost a year. The result was the work of the orgone accumulator. A few weeks later, the patient visited me in the laboratory, about ten miles away, full of gratitude and touching interest in our undertaking.

I have observed only three cases of angina pectoris. In one, a chronic and severe case, the attacks became much less frequent and the patient was able to omit his drugs for long periods of time, although he did not become entirely symptom-free. In the other two cases, the symptoms disappeared altogether after a few months of orgone therapy and did not reappear during the following 3 years.

Observations concerning the effect of the orgone in schizophrenia will be reported elsewhere.

I shall now report the interesting story of a woman who, as the result of orgone therapy, escaped a dangerous operation. The physicians had found a tumor in the descending colon which they considered to be a cancer and therefore advised a resection of the colon. The patient had heard about my cancer tests and wished to have my opinion before submitting to such an operation. My examination by fluoroscope and palpation showed indeed a hard tumor of walnut size in the descending colon. However, the orgone-physical blood tests revealed no trace of cancerous degeneration. Consequently, I advised the patient to wait with an operation until orgone irradiation would have clarified the situation. I knew from experience that it might be a matter of a *spastic* "tumor" and that such spasms are often relieved by the orgone

The patient obtained an orgone accumulator. A week later, the tumor was no longer present. My assumption that it was an alternative between cancer tumor and simple spasm had been correct. Since, however, any chronically spastic tissue might degenerate into cancer, I advised the patient to be careful and to use the accumulator continuously. The patient escaped the dreadful operation and when I saw her again a few months later she was very grateful. Her constipation had also improved, as had her total functioning. This case was under observation for a period of three years. Her condition improved steadily. Such cases are very gratifying and encouraging.

I should like to add that children, at a very early age, like to use the accumulator. At the beginning of my therapeutic research I used to advise pregnant women not to use the accumulator since I did not know the effect of the orgone on the embryo and the function of the uterus. The first test was made in my own house. I would like to thank my wife for having taken the risk. As a responsible co-worker of the laboratory, however, she declared herself willing to make the experiment, true to the principle of our Institute that we first test in ourselves what we recommend to others. The result was excellent. The mother felt well and strong during the pregnancy, the embryo very lively, and the gynecologist stated that the fetal heart tones were particularly strong. Now, the child shows distinctly the biological effects of the orgone; he is taller than children of his age, and extraordinarily healthy.

2. Local application of atmospheric orgone:

For this, the orgone energy is led from a small accumulator through a flexible tube of 2 to 3 feet length. The most suitable material for the tube is the metal armoring of BX cable, wound on the outside with an organic material, such as insulating or adhesive tape. One end of the tube is inserted into an accumulator built as follows: A wooden frame with sides about 1 foot long is covered with celotex, the inside walls covered with thin sheet iron. The space between the iron and the celotex is filled with a mixture of steelwool and rockwool or similar non-metallic matter. This mixture absorbs atmospheric orgone strongly and transfers it

rapidly to the enclosed space, from where it travels in highly concentrated form through the metal tube. At the free end of the tube one attaches a small metal funnel which then is applied to the spot which is to be irradiated. According to experience to date, the following times seem to be indicated: Cardiac region, 2 to 5 minutes; root of the nose, about 4 minutes; mouth cavity, about 5 minutes; eyes, with lids closed, about 1 minute; ears, about 2 minutes; solar plexus, about 3 minutes.

The organism attracts the orgone from the accumulator, and after a few minutes—sooner or later, according to the individual—one feels sensations of warmth and prickling at the irradiated spot.

One can connect thin glass tubes, filled with iron wool, with the tube and thus irradiate the inside of the nose. Similarly, with a larger tube, the inside of the vagina can be irradiated. Microscopic examination shows that rot bacteria in the vagina become immobilized after about 1 minute. The irradiation of the vagina cannot be prolonged beyond about half a minute, because, as a rule, a strong burning sensation makes its appearance.

Burns, wounds and bedsores heal very rapidly with local orgone application. In many cases it is possible immediately to observe the healing process.

My first experience with *local* orgone application was in the case of a 60-year-old man with varicose ulcers. He had ulcers of various depth and inflammation of the surrounding skin on both legs. The condition had already lasted for several years and had been treated in various hospitals for months at a time, without success. He could walk only with great pain, and his earning capacity—he was a farmer—was greatly reduced. During his lifetime, he had saved 400 dollars, of which he had spent 300 for hospitals and physicians. He offered me his last 100 dollars for a cure which, of course, I refused. I did not promise him anything, but let him have a small accumulator for local orgone application. I had no expectations for any effect. During the first 4 weeks nothing changed, in spite of orgone applications several times a day. After that, the ulcers began to heal, the skin became smoother, and after another six weeks looked normal. True, there was a tendency to relapse, but every time the patient was able to pre-

vent a recurrence through intensive irradiation. This poor farmer spread the news of "the miracle" all over the region. His gratitude and the re-establishment of his earning capacity was enough reward.

This success was so widely talked about that during the summer of 1945 a young man came to see me from a considerable distance. He also suffered from ulcers. They were about 2 cm. deep and 3 cm. wide, dry, with necrotic margins and anemic surroundings. It was a rather hopeless picture. The patient took a small accumulator home and started treatment. After only two weeks he came to see me again (he lived 80 miles away): the ulcers now were reddish, there was a good deal of secretion, and there was regenerative tissue present at the bottom and the margins of the ulcers. Four months later he reported by letter that one ulcer had healed completely while the other, though it had become completely flat, had not yet formed a new skin membrane.

Since varicose ulcers, as a rule, resist any kind of therapy, this result of orgone therapy is all the more amazing. Equally amazing is the fact that the physicians who saw these results did nothing to make orgone therapy generally accessible. One physician waits for the other to "accept it officially." This is a pernicious attitude.

This patient later suffered a relapse. He had refused to use a large accumulator in addition to the local "shooter," and he continued to wear an elastic bandage on his bad leg, against my advice. This experience taught me that general charging of the organism is necessary to reinforce the local healing process.

Violent pains also yield to local orgone application. During the construction of the laboratory at Orgonon, a worker cut his ankle with an axe. The pain was so violent that the man was about to faint. I immediately irradiated the wound, and after about 2 minutes the pain ceased. I then dressed the wound, and he was driven to the local physician for further treatment.

In burns, also, the pain disappears rapidly with local orgone therapy. According to my concept, the vegetative nerves retract from the injured spot and thus actually "pull" at the tissues. The

disappearance of the pain seems to be due to the fact that under the influence of the orgone the nerves expand again which stops the pulling. I am ready, however, to accept any other interpretation if it explains the phenomenon better than does my interpretation.

3. Local orgone irradiation with earth bions:

The old-fashioned therapy with mud packs was based on a correct assumption: mud is bionous earth and thus very rich in orgone. Now, mud is not always available, and its application bothersome and messy. Our Experiment XX has provided a new way of applying the biological energy in humus.

In this preparation we achieve three important results at once. First, the orgone water, which we use for the acceleration of growth; second, the flakes which we obtain from freezing the orgone water and which became of such great importance for the theoretical understanding of primary biogenesis; and, third, the *bionous earth* itself. We collect the earth bions which remain when the orgone water is filtered off, and keep them in a dry condition. They are then put into small linen bags, which are sewed closed. If one then moistens this package of bionous earth and puts it on the painful or inflamed spot, the pain decreases rapidly. According to experience to date, irradiation for about half a minute is sufficient. With a longer exposure, many patients show symptoms of violent inflammation. This manner of applying the orgone also seems to relieve local spasms. For a correct evaluation, further study is necessary.

A fourth method of orgone application, the incorporation of orgone water orally or by injection, is still in an early experimental stage. It is already certain, however, that it has vagotonic effects and furthers the growth of plants and animals.

In summary, I may say that the discovery of the orgone and its medical application has opened a number of new and, as it seems, exceedingly hopeful prospects. Of course, I must leave it to further investigations to find out how wide is the realm of the medical applications of the biological energy.

As far as orgone *therapy* of *cancer* is concerned, it had at present reached the point where it deserved to be taken out of the experimental stage and to be put on a large-scale practical basis. As far as the *prevention* of cancer is concerned, that is a more complicated problem, both technically and from the point of view of organization. We shall now consider this problem.

Chapter IX

ANORGONIA IN THE CARCINOMATOUS SHRINKING BIOPATHY

A CONTRIBUTION TO THE PROBLEM OF CANCER PREVENTION

The term *anorgonia* refers to those biopathic conditions which are characterized by a *block in plasma motility*. This disturbance of plasmatic functioning is unknown in orthodox pathology, though it is well known to the practising physician. The reason why this disturbance remained unknown to a mechanistic pathology is that it does not consist primarily in structural tissue changes or nerve tract lesions but in a *reduction of the total energy function* of the organism. Everyday language describes the condition in various terms. They refer to the emotional *expression* of an organism, such as "unalive," "dead," "stiff," "contactless," "cold," etc. (in contrast to "alive," "sparkling," "warm," "having immediate contact," etc.), and render the immediate *impression* which another person makes on us. However, the concept of "anorgonia" which is here introduced for the first time means more than mere "contactlessness" or "unaliveness." It refers to a well-defined, heretofore unknown disease picture which I have found most outspoken in patients with cancer or with a cancer disposition.

Before describing the anorgonia in cancer shrinking biopathy, I must go back to a well-known finding of clinical sex-economy, the significance of which can be comprehended today much more deeply than before the discovery of the orgone. I am referring to the undisturbed plasmatic functioning of the healthy organism and its counterpart, *biopathic falling anxiety* (fear of falling). Let us set out by summarizing what we have learned thus far about the falling anxiety in biopathic diseases:

Falling anxiety makes its appearance in every case of character neurosis or somatic biopathy at a time when the armoring is dissolved and orgastic sensations begin to break through. The "orgo-

notic sensation" is nothing but the subjective perception of the objective "plasmatic *excitation*" which, heretofore, in a mechanistic manner, we termed "vegetative current." The appearance of falling anxiety indicates with certainty that plasmatic excitations and orgastic sensations are beginning to function in the total organism. The signs of falling anxiety are various: dizziness, "sinking feelings," falling dreams, feelings of oppression in the gastric region, nausea. These and similar symptoms characterize the breakdown of the armor, which is accompanied by orgastic sensations, involuntary muscular spasms, hot flushes, tremors, itching sensations, etc. These biological symptoms are psychically represented as a generalized anxiousness and insecurity. Roughly speaking, then, the therapeutic process has to pass through the following stages: loosening of the armor, orgonotic sensations, breakdown of the armor, clonisms, falling anxiety, increased plasmatic excitation, orgastic sensations in the genital apparatus.

If we proceed correctly in dissolving the armorings, the unpleasurable sensations gradually give way to a pleasurable perception of the body. Patients, after having gone through a series of clonisms, often state that "they never felt so well before." If, on the other hand, one does not correctly dissolve the armorings, layer by layer; if rigid armorings remain; if one lets the orgonotic excitations break through too immediately so that they hit on the still undissolved layers of the armor; then the patient is apt to react with a complete withdrawal into his old armoring. Afraid of the plasmatic excitations (pleasure anxiety), he increases his biopathic rigidity. Overwhelmed by increased quantities of mobile biological energy, the patient may experience states of disorientation, panic and even suicidal impulses. That much about the known clinical manifestations.

The falling anxiety may express itself more in the somatic or more in the psychic realm; usually, it is a combination of both. At any rate, the appearance of symptoms of falling anxiety indicates a *biopsychic crisis*, the first step in the direction of health in the sense of orgastic potency. If the orgone therapist knows the structure of the case, these striking symptoms of falling anxiety need not cause him any alarm.

However, falling anxiety is harmless only in pure character neuroses. A number of experiences in patients with cancer or cancer disposition show that *falling anxiety may be the symptom of a fatal process. In these cases, it indicates a complete failure of the plasma function in the biological core of the orgonotic system.*

Obviously, it depends on the *depth* of the biopathic disturbance. The orgone therapist must know whether he is dealing with a superficial disorientation of the organism occurring with the transition from rigid to freely mobile functioning, as in pure character neuroses, or with an oscillation of the total plasma function between *pulsation* and *non-pulsation*, as in the cancer shrinking biopathy. As always, these distinctions are not sharp; there are fluid transitions. It is important for the therapist to develop a feeling precisely for these transitions from the light to the severe syndrome of falling anxiety. Really, the cancer shrinking biopathy is nothing but a particularly severe form of character neurosis if, as we must, we mean by "character" the *biophysical* mode of reaction of an organism. The attitude of resignation can progress from superficial to deep layers of the biosystem and thus extend to the cell plasma function itself.

We shall now examine the biophysical mechanism of falling anxiety in the cancer biopathy. The attentive reader will have been struck by the great role played by the biopathic falling anxiety in cancer patients. Our first patient could have maintained the health which she had recovered had it not been for the tremendous falling anxiety which came with her sexual excitations. The patient had actually collapsed in my laboratory a short time after she had become free of cancer, symptomatologically speaking. Her legs had suddenly failed. From then on, she remained in bed. She developed a phobic fear of getting up, thus made further orgone therapy impossible and kept shrinking until her death a few months later. Basically, I did not understand her falling anxiety; all I knew was that it had been provoked by the sexual excitation. The experimental cancer cases I have seen since (1941 to 1946) all showed this falling anxiety with the same typical manifestations. As time went on, I recognized the manifestations more easily and began to understand them better. It

was to be expected that further study of the falling anxiety would lead to therapeutic measures; this expectation was confirmed in two cases of cancer biopathy which came to treatment at a relatively early stage. All in all—besides in pure character neuroses—I studied the falling anxiety in 6 cancer cases and, in the phase of first development, in an infant of 3 weeks of age. I shall not present any complete case histories but only those parts which refer to the diagnosis of anorgonia and to the falling anxiety. The falling anxiety observed in the infant will provide the key to the problem.

1. ANORGONOTIC PARALYSIS. FALLING ANXIETY AS THE EXPRESSION OF PLASMATIC IMMOBILITY

I shall first summarize the findings which make the biopathic falling anxiety comprehensible as the expression of plasmatic immobility. The cancer patients observed had the following symptoms of plasmatic immobility in common:

1. *General physical debility:* slowing of all motion, tendency to avoid motion and tendency to remain lying in bed. It should be noted that the disturbance of plasmatic motility had, in every one of these cases, *existed long before there were the slightest signs of cancer.* In 3 out of the 6 cases, a slowing of speech and of all motions had existed since early infancy.

One patient had the phobia in adolescence that "somebody was after her" in the street. *Her legs would fail her and she felt she was going to fall down.* Later, in her shrinking biopathy, the legs were first to show marked atrophy; her fear of walking was based mainly on the weakness of her legs. There was a transitory paralysis of the anal and urinary sphincters. It was a fracture of the *femur* (thigh bone) which finally led to the fatal outcome. (The local cancer growths were at the 10th, 11th and 12th dorsal vertebrae and the 5th, 6th and 7th cervical vertebrae).

The patient gave as the reason for her keeping to her bed the danger of breaking her spine; I was able to demonstrate the fact that it was not a matter of a mechanically caused pain in the vertebrae but a matter of *falling anxiety.* It was possible to make the patient walk. During her good period, she had walked around a good deal, in spite of the fact that the deformation of the spine

was irreversible. Later, she was unable to move her legs and was afraid that if she were to move, some part of her body would break apart.

2. In all cases, falling anxiety is accompanied by a *disturbed sense of equilibrium.* The connection between the two phenomena is probably this: *The disturbance of the sense of equilibrium determines the falling anxiety,* and not vice versa. The falling anxiety is a rational expression of a biopathic disturbance in innervation, and not its cause. In several cases, it was indirectly fatal in that it prevented the continuation of the orgone therapy, encouraged the atrophy of muscles and the development of bedsores which contributed to the fatal outcome.

One of the 6 cancer patients—with a carcinoma of the prostate—was for some time, as a result of orgone therapy, free from local symptoms (urine clear, free of cancer cells and T-bacilli, no local pain, etc.), but the legs became atrophic and he developed a *functional abasia* (inability to walk). In this case, too, the motor reflexes were normal. I treated this patient with orgone therapy and a simplified vegetotherapy daily during 4 months each during the summers of 1942 and 1943; thus I had ample opportunity to acquaint myself with the peculiarities of the paralysis. After the elimination of the local tumor of the prostate, the patient walked around and seemed to get better and better. He had no pains, his appetite was excellent, he gained seven pounds within a few weeks, was hopeful and even started to work. In the midst of all this progress, he suddenly collapsed *in the knees* one day and fell down. His knees had failed him "as if life had suddenly left the legs." From then on, he was unable to move his legs, he had to keep to his bed and soon there was a progressive atrophy of the muscles in both legs. Two months later, he lost control of the urinary and anal sphincters. There was a blunting of sensation in the legs and the perineum. There was no disturbance of tactile sensation, but the perception of pain stimuli was reduced. The urinary sphincter was spastic, the anal sphincter paralytic. He was unable to urinate and unable to retain his feces. The sensory disturbance was not sharply defined, that is, it did not correspond to a definite spinal segment. That it was not a matter of a central

lesion in the spinal cord but of a *biopathic* paralysis of the plasma periphery was not only shown by the irregularity of the disturbance but even more by the fact that it was possible to reduce and finally to eliminate the paralysis. *Only in the course of the orgone-therapeutic treatment of the immobility*, that is, with the return of the ability to sit up and to move the legs, did the biopathic character of the paralysis become evident; only then did the falling anxiety and the disturbance of equilibrium make their appearance.

Before entering upon this, I have to counter some possible objections: One might have assumed that the disturbance was of a mechanical nature. This seems highly unlikely, for a lesion in the spinal cord, say, a tumor, would have led to a progressive increase of the disturbance; the elimination of the disturbance by orgone-therapeutic means would have been impossible. A peripheral paralysis of the nerve was out of the question; true, there were pains similar to those seen in neuritis, but they could be eliminated by purely orgone-therapeutic measures. In addition, neuritis itself would have to be explained as a symptom. In the case of a mechanical lesion, either central or peripheral, it also would not have been possible to influence the disturbance of anal control. The disturbance fluctuated, however, with the total biopsychic condition of the patient. If he was in a good mood and hopeful, he was able to move his legs much more easily and extensively than at times when he felt hopeless.

The localization of the tumor in the prostate was immediately caused by 8 years of sexual abstinence. The later spasm of the urinary sphincter and the paralysis of the rectum were of a sympatheticotonic nature; it was the *immediate* basis of the carcinomatous degeneration of the tissue. From this center at the perineum, the biopathic paralysis extended to the legs. Thanks to the orgone therapy, the patient had not developed any metastases. The upper part of the body and arms remained mobile and strong until the last. There was no cachexia except in the legs. One had to assume, then, that the location of the paralysis in the legs must have its specific reason.

During the summer of 1943, I worked with the patient daily in an attempt to mobilize his legs. At first, I loosened the spasms

of the ankle musculature by passive motions, gradually extending the work to new parts. This procedure was very painful, but soon the patient became able to move his toes, ankles and knee joints. Then I proceeded to the musculature of the thighs and finally to the hips. After about 4 weeks of biopsychiatric orgone therapy, he was able to move his knees and hip joints. Soon after, he was able to sit up in bed. This gave him new courage and increased his cooperation.

Now I suggested his moving from bed to an easy chair. His reaction was peculiar: He seemed very enthusiastic, but when he was supposed really to do it, he became evasive: he wanted to wait a while, etc. There was no doubt that he was perfectly capable of sitting in the easy chair, since he was able to sit up in bed without any difficulty. Plainly, he was afraid of the transition from bed to chair, although he knew that he would be assisted by two strong individuals and that really nothing could happen to him. As a transitional measure, I suggested sitting on the edge of the bed. He showed some hesitation about this. We helped him and supported him; but as soon as his legs swung freely, he experienced violent anxiety, became pale and broke into a cold sweat. It should be noted that he did not have pain of any kind but *merely anxiety*. After half a minute he implored us to be allowed to lie down again.

This was exactly what I had witnessed in my first cancer patient. I asked him to give me an exact description of the sensations which caused him to implore us so pitiably to be allowed to lie down again. He said he had a great feeling of insecurity, that his body, from the hips down, felt *numb, "as if it didn't belong to him," as if "it might break any moment."* He had a deadly fear that *he might fall or that we might drop him*, and then his body would break. In this connection, he remembered a peculiar condition from which he had suffered between the ages of 6 and 18: It often happened, when he was working in the woods, that *his knees and thighs failed him suddenly so that he collapsed or had to sit down suddenly*. No physician was able to interpret these states of weakness.

Now we understood that the later anorgonia of the lower part

of the body was based on this anorgonia which had developed in childhood. That is, the anorgonia preceded the cancer disease by some 60 years. The mechanism of such anorgonotic attacks of weakness is obscure. It may be relevant to mention the fact that the patient's mother had died shortly after his birth; he was brought up by foster parents who showed him little if any love and made him work hard even as a child.

The dulling of sensations in the lower part of the body had been eliminated by vegetotherapy except for a spot of about two square inches at the penis root. All stimuli were perceived. There was no pain with movement; lying on his back in bed, he could move all joints without pain and often even made dance-like movements with his legs. All the more baffling, therefore, was his violent anxiety which occurred with sitting up and having his legs dangle over the edge of the bed.

Now I had him practice sitting on the edge of the bed for a minute or two several times a day. This helped. After a week of this, his falling anxiety had been sufficiently reduced so that we could get him into a wheelchair and take him outside. The falling anxiety seemed to have been overcome. By lying in bed for months, and as a result of the atrophy in the legs, he had lost the *feeling of his body, and with that the feeling of equilibrium*, but had partly regained it by getting used to sitting up, so that the falling anxiety disappeared.

If we translate the process into the language of orgone biophysics, we may say the following: The biopathic shrinking process had almost extinguished orgonotic motility and, with that, the organ perception. This allows the conclusion that the *organ perception is an immediate expression of the motility of the organ plasma*. The *loss* of organ perception results logically in the sensation that the body is something alien, and in the fear of falling and "breaking." The sensation of numbness in the presence of sensory-motor reactions admits of only one interpretation: *The numbness is the subjective perception of objective orgone immobility in the affected parts*. It is accompanied by a sensation similar to that in an arm or leg which "has gone to sleep" and that of "ants crawling" over the limb. The anorgonia of our patient differed from an acute numbness only in its duration and its biopathic background. Otherwise, the symptoms were the same.

The question arises: Does anorgonia consist in a *decreased orgone content* in the tissues, or in an *immobility of the tissue orgone* without a change in quantity, that is, a reduction of orgonotic pulsation? We shall postpone the answer to this question.

The patient felt well for several months, even regaining rectal control. Then, with bad weather, he experienced violent pains. A physician gave him injections of snake venom to combat the pains, and a few days later the patient died. Probably, he would have died anyhow, for the carcinomatous shrinking had been deep-reaching. However, it goes without saying that orgonotically weak tissue poorly tolerates poisonous drugs. For this reason, we have come to regard drugs with a sympatheticotonic effect or which damage the tissue as contraindicated, even though they may alleviate pain. Instead of eliminating the anorgonia, they increase it.

I shall proceed to the description of another cancer patient who also died subsequently. The tumor, histologically a sarcoma, had developed in the right shoulder (deltoid muscle). The tumor receded under Xray treatment; this also resulted in a third degree burn of about 8 inches square. This was bad prognostically. The general biopathic condition was also alarming. The skin all over the body was pale and clammy. The legs were cold and showed a condition which we now know as anorgonotic: livid coloration, clamminess, no perceptible orgone field. The patient was a quiet, resigned character. He felt that he had missed his chances in life and had achieved nothing. He was particularly worried about his pelvis which he felt to be "numb, like dead." As long ago as a year *before the appearance of the tumor* he had considered coming to me for vegetotherapy, but because of the rumor spread by some psychoanalysts that I was crazy, he had refrained from doing so. When, later on, the appearance of the tumor confirmed his old apprehensions, he decided to come to me for orgone therapy after all. It is difficult to say whether in this case the irresponsible talk of rumor-mongers has cost a human life; but it is more than possible that a year earlier the patient could have been saved.

In the course of four months of physical and psychiatric orgone

therapy, the patient made good progress. Gradually, he became less reserved and even became able to break out in anger which he had never been able to do. Under the influence of the orgone, the Xray burn healed rapidly. The patient gained weight, improved his neurotically complicated family situation and rapidly approached the point where the orgasm reflex was to appear.

It was clear why the tumor had become localized at the right shoulder. Ever since he could remember, his right arm had been "weak." He felt that the impulses in the right arm never had really come through. The right shoulder blade was pulled back more than the left. In the 12th session, violent beating impulses in the right arm broke through; but it took a long time before he could really let himself go and hit. *As soon as a beating impulse began to break through, the patient developed a severe spasm of the glottis.* The voice and the breath were cut off, the patient looked as if he were going to *choke.* His face assumed a *dying expression.* The eyeballs were turned up, the skin became pale and livid, respiration shallow, and the pulse thin. This syndrome had heretofore remained hidden; orgone therapy had brought it to the surface. In a milder form, these manifestations had been present for *decades.* The patient recognized that his resignation was in part due to the fact that as a small boy he had never succeeded in holding his own in fights with other boys. *As soon as he tried to defend himself and to start hitting, he became short of breath and felt choked in his throat.* This rendered him impotent and cowardly. Naturally, this injured his pride and he soon resigned. He became cowardly, submissive, evasive, and ashamed of himself for this reason.

Let us keep this biopathic reaction of our patient in mind. We shall meet it again at the end of his life and shall understand the gigantic significance of the biophysical structure for life and death. The fact should be emphasized that this patient does not represent any extraordinary case but a *typical* one.

The glottis spasm and the dying attitude turned into the patient's typical reaction to any progress in the treatment. His pelvis, as he said, was "dead" when he came to treatment. Gradually, the

orgasm reflex developed, but it was mechanical, without orgonotic sensations in the pelvis. With the working through of the infantile masturbation anxiety, there was some improvement, but the anorgonia of the pelvis remained. We both had the impression that this pelvis had never been "alive," as if it were "helplessly dead." It was not without reason that, for many years, it had been his most serious concern. When he first heard of orgone therapy, he knew immediately that it applied to his case.

After several weeks of sustained effort to mobilize the pelvis, a spontaneous pelvic movement *forward* with strong orgonotic sensations suddenly occurred one day. That is, in the depth the orgonotic motility was still alive. But the patient's reaction was so violent that suddenly I understood the *depth* of the anorgonia.

After the pelvic contraction, he immediately fell back into the "dying attitude." The glottis spasm now was so severe that he could hardly get his breath. Several days later, several spots on his shoulder, in the region of the Xray burn, began to swell.

The orgone therapist is quite familiar with spastic reactions to newly mobilized plasma current. It cannot be expected that the orgasm reflex should develop without spasms. On the contrary, every new advance to plasmatic streaming in the biological core provokes ever deeper anxiety reactions, contractions at the place of the break-through, the return of previously dissolved muscle spasms, etc. This we count on in every case.

In the cancer shrinking biopathy, this process is more complicated. Here—in contrast to other biopathies—the anorgonia works in the biological *core* and therefore can lead to a complete block of pulsation. Clinical experience leaves no doubt about this. Thus, one is never far from a cessation of the life functions. The problem, then, is whether and how quickly one can play the function of expansion against the anorgonia. The cases yet to be described will bring some clarity here.

To return to our case: Repeated blood tests showed that his biological progress continued. When he came to treatment, his blood was extremely orgone-weak: 70% hemoglobin, 99% *T-reaction,* disintegration of the erythrocytes *in seconds,* etc. After

6 weeks of orgone therapy, the blood was normal: 84% hemoglobin, *almost 100% B-reaction*, disintegration of erythrocytes in 30 minutes, full orgone margin of the red blood cells.

The complex nature of the cancer biopathy is again shown in the fact that neither the surgical removal of the tumor nor the re-establishment of the full orgonity of the blood were sufficient to halt the shrinking of the autonomic life apparatus. Nor could the prevention of the cachexia, the loss of body substance, which succeeded by orgone therapy, prevent the fatal process. *The patient died without cachexia and with healthy blood.* An authority in the field of mechanistic cancer pathology found this to be true, to his great amazement.

The reader will understand why, in my presentations of experimental orgone therapy, I keep repeating that, though we are *on the way* to an elimination of the cancer scourge, there still are many, and *deep-lying*, disease mechanisms still to be understood and mastered. In view of this complex nature of the cancer biopathy, it is strange to read in newspapers and magazines, about once every week, about a new chemical which promises to cure cancer. Radical cancer therapy is going to be much more difficult than that.

All the more peculiar is the attitude of traditional pathology which not only approaches cancer with erroneous premises, not only gets stuck in the local symptom, but which, in addition, seems to be so enmeshed in hopelessness that it seems not to take cognizance of the fruitful efforts of orgone biophysics. I repeat: seems to. It may be that its silence about sex-economic cancer research is just an attitude of waiting. In other aspects of our work, too, we often feel as if we were speaking in a large empty hall the walls of which are full of ears but without speech. This should not discourage the friends of orgone biophysics: One day what orgone biophysics promises today will be distinctly heard.

The therapeutic situation of our patient was the following: His anorgonia was marked; in his character, he had a strong tendency to resignation; at the time of treatment, he had no tumors, but his plasmatic motility, which alone could save him, was greatly reduced; it had just, for the first time, reappeared to any appreciable

degree; to this, he had reacted with severe orgasm anxiety, in particular, with a violent glottis spasm.

He took lessons in vegetotherapeutic gymnastics in order to liberate his body motility. One day, he slightly wrenched a muscle in his left buttocks. Three weeks later, a small tumor appeared at this spot which gradually, in the course of another three weeks, grew to the size of a child's head. He could still walk, but now his *tendency to lie in bed* appeared again. He stayed in bed until his death. While the tumor at the left hip ceased to grow, the small swelling at the right shoulder began to grow again.

One day, there were difficulties in urinating, and, exactly as in the patient described above, the perineum and the root of the penis became "numb." An Xray series of the whole body revealed that—apart from the two tumors just mentioned—there were no metastases in any of the inner organs. This is an astounding finding in the case of lymphosarcoma. There were some swollen glands in the right inguinal region and in both axillae. The right shoulder became more and more threatening. The attacks of glottis spasm became more frequent. An edema developed over the whole right arm, up to the first rib. The voice became hoarse, and there was an increasing danger of death through suffocation as a result of glottis edema. The surgeons had no suggestion to make with regard to the edema. Puncture of the tumor at the hip revealed malignant small cells.

The numbness in the genital region could again and again be eliminated, so that the use of a catheter could be avoided.

One day the patient developed a continuing glottis spasm which led to his death by suffocation.

Like the other cancer patients, this patient also did not die from the local tumor, from weakness, heart failure or cachexia. *The immediate cause of death was the glottis spasm which the patient had developed decades before the appearance of the tumor.* The location of the tumor, and the later edema, at the right arm was unequivocally determined by a chronic biopathic impulse inhibition in the right shoulder.

We understand the *immediate* cause of death, and the development and function of the glottis spasm in connection with his

genital anorgonia which had caused the patient so much concern. We also understand the rapid relapse as a reaction against the first intense plasmatic currents. What remains to be understood is the *biopathic mechanism in the tissues of the right shoulder* which resulted in the edema. The Xrays showed the tumor at the right clavicle to be the size of a small apple. That is, the edematous swelling of arm and shoulder were not due to the tumor growth. "Clogging of the lymph passages" may explain the edema formation in part, but certainly not in full. One can assume that the edema of the tissues impeded the flow of the tissue fluids as well as the opposite, that a clogging of the lymph passages with tumor substance caused the edema.

In the place of a purely mechanical interpretation of the edema in cancer patients, I would like to attempt a *biophysical* interpretation: this, I believe, is more in accord with cancer biopathy than the mechanics of the "clogging of passages." There are a sufficient number of ramifications and secondary passages to allow the flow of the fluid from the tissues. There must be something else at play here.

There is edema in starvation. Certainly, there are no "clogged lymph passages" in this case. Nevertheless, there is edema. There is edema of the gums in the case of toothaches. Here, again, there are no clogged lymph passages, and yet, there is the edema. There is edema of the legs in pregnancy. If this edema were mechanically caused, then all pregnant women would show this edema, which is far from being the case. There is edema in burns and inflammations, where there is no clogging of passages.

Hoff writes, in L. R. Müller, LEBENSNERVEN UND LEBENSTRIEBE, 3rd ed., p. 753f.:

> In all cases of paraplegia of long standing one finds edema in the legs, due mostly to the impairment of circulation resulting from the lack of motion. In two cases, however, Böwing found, immediately after the spinal injury, such an extensive edema of the legs that one had to assume the existence of a trophic damage to the vessels. Marburg and Rance made similar observations in patients with bullet injuries of the spine. In hemiplegia, we have seen an edema of one side of the face appear together with a paralysis of the facial nerve.

> These observations also help to understand the angioneurotic edemas described by Quincke. *We do not yet understand in detail how, in these cases, a disturbance in vegetative vascular innervation leads to edema* [italics mine—W. R.]. According to the findings of Ascher and his school, however, it is probable that the vegetative nerves can influence the permeability of the membranes and with that of the walls of the capillaries. . . . Unilateral edemas on the side opposite to the brain lesion are not rare where the lack of motion alone is not sufficient as an explanation. Böwing observed *the formation of vesicles on the skin, thinning of the skin with a shiny appearance, changes in the nails and increased growth of hair* on the paralyzed side. In psychotic patients with organic brain changes, Reichard often found trophic skin lesions, in particular, *ulcers*, which could be explained neither by emaciation nor by injury through pressure.

To return to the edema in cancer. Observations in cancer patients, taken together with the above-mentioned non-carcinomatous edemas, permit the assumption of a *functional, biophysical* causation of the edema. The movement of body fluids is not a mere mechanical function. It cannot be assumed that the lymph glands and lymph vessels are rigid, that, in other words, the motion of the lymph takes place purely passively and mechanically. Rather one must assume that all organs, including nerves, vessels, lymph passages and tissue cells, are contractile, that, though in different rhythms, they *pulsate*.

The life functions of the various organs are based on their pulsation. We must be *consistent* in the application of our functional concepts. Each organ, independently of the total organism, forms a *living unit*, having perception and the ability to react to stimuli. This has been demonstrated unequivocally in extirpated organs, such as heart, intestine, bladder, etc. We must assume, then, that each organ reacts to injury and disturbances of function in the same way in which the total organism reacts to disturbing stimuli: The living reaction to disturbances in function consists either in an *intensification* of the specific function, for the purpose of *destroying the disturbing stimulus*, or else a *withdrawal from the diseased organ*. Examples of the first mode of reaction are: processes of regeneration and of inflammation, increased blood

temperature, etc., as well as the formation of PA bions and cancer cells as a defense against cancerous tissue disintegration, and the destructive anger reaction.

Anorgonia belongs to the second mode of reaction to disturbances of function. While the first reaction is one of fight against the injury, the second is one of *resignation*, or, in different terms, one of isolating the injured part from the still healthy organs. The isolation of diseased parts is known in pathology in the form of sequestration, i.e., the expulsion of a diseased bone part. In the animal world, one knows the elimination of a diseased member, for example, a leg, by biting it off. The counterpart of biophysical isolation of diseased parts is inflammation with *regeneration*. Where regeneration, that is, plasmatic growth reaction, is no longer possible, isolation takes place.

This isolation of the diseased organ is readily observable in cancer patients. It is characterized chiefly by a withdrawal of the autonomic nerves and a cessation of their pulsation. This explains in a simple and logical manner a number of secondary symptoms: the local *anemia*, the *numbness*, the excess of CO_2, and, finally, the *atrophy* of the cell substance. We see severe *ascites* occur in cancer of the stomach or the ovary where one cannot speak of a mechanical clogging of drainage. This leads to general disturbances of function such as intestinal paralysis and thus accelerates the fatal course. I believe that the main factor in inhibiting the movement of body fluids in the region of the diseased organs is the *anorgonotic block of motility* in the autonomic nerves. With that, the edema is explained functionally. In edema and similar anorgonotic conditions, we are dealing not with mechanical, chemical or physical functions, but with specific *orgonotic* life functions.

Are there experimental proofs for this orgone-physical assumption? To begin with, orgone-therapeutic experience shows that anorgonotic conditions can be alleviated or eliminated. Since this therapeutic method is based on the premise that the *autonomic nervous system is contractile*, its practical results confirm the correctness of the assumption.

Furthermore, there are a great number of phenomena in classical physiology which remain incomprehensible without a knowledge of the *orgone-physical* functions. One of these, for example, is the normal function of resorption in the intestines. The course of an edema which was caused by local anorgonia depends on whether or not the fluid of the edema can be *resorbed*. This in turn depends on the orgonotic potency and the pulsation of the respective tissues. Let us summarize the known processes of intestinal resorption:

The nature of resorption is an important and, according to the physiologists, a completely obscure problem of mechanistic physiology. The problem is this: *Does the resorbing membrane of the intestinal wall act like a dead membrane or do the cells do active work?* The processes in living tissue often contradict the purely physico-chemical processes in semi-permeable membranes. *The resorption of food through the intestinal wall cannot be ascribed to osmosis.* Heidenheim[1] made the following experiment: He took blood from a dog, opened his abdomen and introduced the dog's own blood serum into an empty intestinal loop which was closed off at both ends. It was shown that the dog *resorbed his own serum*. Since, in this experiment, there is *no difference in concentration between intestinal content and tissue fluid*, the purely mechanical processes of diffusion and osmosis cannot have a part in the process of resorption. The physiologists then tried to explain resorption—which cannot be explained by the principle of osmosis or that of diffusion—by the *work done by the intestinal muscles*. They assumed that in this experiment the intestinal muscles, which can exert a pressure on the intestinal contents from all sides, pressed the serum *mechanically* into the blood; they made it filter through the intestinal membrane, as it were. Relevant experiments showed that this assumption was erroneous. Reid used as diaphragm pieces of small intestine taken from a freshly killed rabbit. He separated *two spaces which were filled with the same kind of salt solution*, that is, *isotonic* spaces. It was shown that these pieces of intestine transported the solution for some time from the mucosa side to the serosa side. In the words of Höber, then, the *intestinal*

[1] The following data are taken from Höber, LEHRBUCH DER PHYSIOLOGIE DES MENSCHEN, 7th ed., 1934, p. 69ff.

wall itself did the work: "It sucks or presses the solution through itself." Höber adds:

After some time, apparently when the intestinal wall dies, but also when one chloroforms it, it fails; this proves *that it depends on the viability of its cells* [italics mine—W. R.]. How is this to be explained? A logical hypothesis is the following: The intestinal villi contain smooth muscle fibers which shorten them; furthermore, the lymph spaces in the sub-epithelial reticular connective tissue open into a central chyle vessel which leads into the deeper, larger lymph vessels which carry chyle, that is, intestinal lymph. Since the villi are alternatingly erected and shortened by the periodic activity of the muscles, a sucking and pumping effect comes about; for the villi do not get thicker when they shorten, so that the space of the central chyle vessel becomes alternatingly smaller and larger. . . . If this mechanism of a "villus pump" actually operates, then we understand the puzzling experiment of Reid's. In this case, we have to admit unequivocally that vital activities take part in the process of resorption; but the problem which then remains to be solved is none other than that with which any muscle contraction confronts us.

As we have seen, *the mechanistic interpretation of the function of resorption*, of the movement of fluid through the intestinal wall, fails. The mechanical functions of osmosis and diffusion fail in the explanation of living phenomena. After having tried in vain to uphold the mechanistic viewpoint, Höber continues:

But there are also observations which are strictly at variance with what one would expect according to the laws of osmosis and diffusion. O. Cohnheim, for example, showed that when a cephalopod intestine filled with sodium iodide is suspended in ocean water, all NaI is expelled into the surrounding solution. In dogs it can also be shown that, under certain conditions, the NaCl content of a solution in the intestine becomes *less* during resorption than that of the blood plasma, that, in other words, the NaCl *does not wander according to the potential of concentration.* [The NaCl, then, does not wander, as one would expect, from the higher to the lower concentration, but from the lower to the higher concentration!—W. R.] This is an achievement comparable to that of bringing a gas from a lower pressure, to a higher one. This is an achievement which also takes place in other organs; for the achievement of concentration is typical of many glands. . . . This proves again that the *living cells take an active part in resorption.*

This admission contributes nothing to the solution of the problem which was correctly formulated by mechanistic physiology. Mechanistic physiology leaves us in the lurch when it comes to understand *in what manner* and according to *what energy laws* the living cells perform their work which is at variance with the mechanistic laws of potential drop. The known laws of mechanics do not apply here. Does orgone physics give a better answer? It is the following:

1. According to the law of orgone physics, the stronger orgonotic system always attracts the weaker system. It follows that the intestinal wall can absorb the intestinal contents, but not conversely, the intestinal contents the fluids of the intestinal wall. The movement of the fluids in one direction and only that direction, then, is determined by the law of *orgonotic* functioning. The bions of the foodstuffs in the intestine are extremely weak orgonotic systems compared with the orgonity of the intestinal wall. This law of orgonotic functioning was derived from direct observation, and not by any means thought up for the explanation of biological phenomena. Only after it had been discovered at the orgone accumulator was it, secondarily, and successfully, applied to biological processes. The attraction of the weaker by the stronger orgonotic system applies in the living as well as the nonliving realm of functioning.

2. The circulation of the blood and the body fluids depends on the *intensity* of the function of pulsation in the organs. The more "alive," that is, the more active an organism is, the more intensive its orgonotic pulsation is, the more rapid and complete is the metabolism of the body fluids. Increase and decrease of metabolism are vegetative life functions which are immediately dependent on the general pulsatory activity of the organs. A "*decrease in vitality*" is orgone-biophysically understandable as a *decrease of orgonotic motility* which may go as far as complete anorgonia. Seen from this standpoint, the edema with a tooth-

ache, in starvation, in nerve injury or in burns, in many pregnancies and in circumscribed cancer tumors, develops for *one* essential reason:

The pulsatory activity of the respective organ or region is decreased; this results in a slowing of the movement of the body fluids. In the region with decreased pulsation an accumulation of fluid takes place; more fluid flows into the diseased region than flows from it.

The pulsatory activity of an organ depends, first of all, on the activity of the autonomic nerves. Thus, the immobilization of autonomic nerves in any part of the body must result in a cessation of the movement of body fluids. This makes readily understandable the formation of fluid-filled vesicles in the case of burns, as well as the formation of various kinds of edemas.

To return to our cancer patient: Since childhood, he had suffered from an inhibited motility in his right arm and in his speech organs. This inhibition of motility, together with the corresponding spasms and local anorgonia of the tissues, had led to the local tumor in the right deltoid muscle. Back of this local anorgonia was his general character trait of resignation which had reference particularly to the pelvis and the genital. To this corresponded the local anorgonia of the genital apparatus which toward the end led to a paralysis of the bladder function. In these two anorgonotic regions there developed edemas due to the blocked motility of the autonomic nerves. Death took place through suffocation due to glottis spasm.

We shall now proceed to another case which demonstrated the anorgonotic paralysis particularly clearly. As a child, the patient suffered from a sore throat (suspected diphtheria) which was followed by a slight cardiac weakness. Menstruation began at the age of 12 and was normal in the beginning; later, there were always, on the first day, violent cramplike pains in the region of the left ovary. Neither hot compresses nor drugs helped. The left side of the lower abdomen remained a "weak spot" in which violent pains kept recurring. At the age of 16, the patient started working in an Xray laboratory. Three months later, she felt poorly, suffered from nausea, palpitations and loss of hair. A physician prescribed arsenic which, however, she tolerated poorly. The cardiac complaints became worse. At the age of 17, she was found to suffer from severe anemia, swelling of the breasts and disease of the ovaries. The pains in the region of the left ovary kept getting worse. Different physicians made different diagnoses, such as "inflammation of the ovary," "spasm of the uterus," etc. All medication was of no avail. Two years later the patient found that her left leg tired very easily, and a phlebitis appeared. Every year, the patient suffered three or four times from "grippe," at which time the weakness in the leg and the "phlebitis" always increased. Soon, there were pains in the lower abdomen. After the delivery of a child the swelling in the left leg became worse and her whole body became sensitive to pressure. Her physician found anemia: 3.2 millions of erythrocytes and 56% hemoglobin. Different kinds of treatment were tried, to no avail. The case history shows that the many physicians who were consulted conflicted with each other both as to diagnosis and therapy. At various times, the patient had been treated with diathermy, liver injections, heat treatments, and evipan.

Blood examination.

The orgone-physical examination of the blood revealed a peculiar picture which I had never seen before: *Hemoglobin* was 95% while at the same time the blood culture was strongly *positive* and the *T-reaction almost 100%* as shown in the autoclavation test and in the Gram stain of the blood colloid. Microscopically, the following was striking:

Although the autoclavation test pointed to an extreme orgone weakness of the erythrocytes, they showed, microscopically, *no* shrinking and *no premature bionous disintegration* (disintegration in 20 minutes); on the contrary, they showed a *wide, strongly radiating orgone margin.* What was particularly striking was that some erythrocytes were *far larger* than normal. In every field there were numerous large cells with smooth plasm, resembling macrophages. It was observed that the erythrocytes grouped themselves about these large plasmatic cells at a certain distance, that is, without contact of the membranes; however, they formed strong

orgone bridges. After a few minutes' observation, I had the impression that the erythrocytes were tremendously *overcharged.* To this overcharge, which expressed itself in the color and size of the erythrocytes, corresponded their *extremely slow disintegration* in physiological salt solution: while normally the first bion vesicles appear in the erythrocytes after about 3 to 5 minutes, the erythrocytes of this patient showed no bionous disintegration even after 15 minutes. When it finally occurred, the resulting energy vesicles were extremely large and strongly radiating.

I shall summarize the peculiarities of the blood picture in this patient in such a manner as to make it understandable why I made the diagnosis of a *latent leukemia.*

In Chapter V, on the cancer biopathy, I expressed the assumption that leukemia is not a disease of the white blood corpuscles, but of the *erythrocyte* system. My assumption was that the erythrocytes undergo a process of disintegration or putrefaction, and that then the white corpuscles increase in exactly the same manner as when there are bacteria or other foreign bodies in the blood stream. *The "foreign body" in leukemia is the disintegrating erythrocyte itself.*

The patient's blood picture showed the following contradiction: *Microscopically,* the erythrocytes were overcharged, radiating abnormally strongly. Autoclavation, on the other hand, showed inner putrefaction, that is, *almost 100% T-reaction.* It is difficult to harmonize the orgonotic over-radiation with the simultaneous process of putrefaction in the erythrocyte. However, we know many processes in the organism which consist in an exaggeration of normal biological functions and which occur when the defense against pathological processes in the same organ requires this additional effort. The patient, then, suffered from a chronic, latent tendency to putrefaction in the erythrocytes. *To this putrefaction of the erythrocytes the organism reacted with an increase in white blood corpuscles, with the development of large, macrophage-like white cells, and with temperature rises, that is, with frequent lumination of the blood system, to overcome the orgonotic weakness.*

A diagnosis on the basis of a stained smear is not possible in these cases. What matters here is not the name or the structure of the various kinds of white blood corpuscles, but the living function of the grouping of red cells around white ones, and the orgonotic constitution of the living and the disintegrated blood cell.

As always, orgone therapy became the touchstone of my hypothesis. If my hypothesis was correct, the application of orgone energy would eliminate the tendency to putrefaction in the erythrocytes and the corresponding manifestations. My expectation was confirmed. As early as one week after the beginning of orgone therapy, the blood culture was negative. The erythrocytes were smaller than before and there were fewer white blood cells in the field. The disintegration of the erythrocytes began after 3 to 5 minutes, and this time there were also T-spikes.

Two weeks after the beginning of the orgone therapy, the large cells with smooth plasm had disappeared, and after another three weeks the T-spikes and the over-radiation. Three weeks later, the T-reaction after autoclavation—which on first examination had been almost 100% positive—was only 10-20% positive. The blood picture was almost normal. In the course of the following year, blood tests were made about once a month. The culture reaction remained negative, the over-radiation and the increase in white cells did not recur. But the T-reaction after autoclavation continued, in the form of a greenish discoloration of the colloid and in the form of disintegration into T-bodies. In the course of this year, the culture reaction in bouillon was once positive; this happened after the application of drugs by another physician.

The *fever attacks* from which our patient had suffered for so long had to be understood as a *reaction of the blood system to its own tendency to putrefaction.* The blood had reacted toward its own orgonotic weakness as it would react toward a toxicosis. The proof of this lies in the fact that the fever attacks disappeared together with the hyporgonia and the T-reaction of the blood. It remains for further investigations to determine whether what is called *"functional or cryptogenic fever"* always is due to a *lumination* of the blood cell system, that is, a defense reaction against

the disturbance of vegetative functions. In this case, the blood system reacted precisely as it does in the case of an infection with bacteria.

The father of this patient had died of leukemia. For some time, the patient had suffered from a suspicious leukocytosis. At certain times of her functional fever, she had a leukocytosis up to 14,000. Her physician, too, had suspected some kind of latent leukemia, although the customary methods of examination provided nothing to substantiate this suspicion. Our blood tests left no doubt about the *cancerous* character of the blood picture. True, there were no circumscribed malignant tumors, but numerous precursors such as tumors of the ovaries, putrefaction of the uterus, etc.

Personally, I have no doubt that the patient would have died of leukemia if the orgone therapy had not been successful.

There was, then, a latent hyporgonia of the erythrocytes. The course of the orgone therapy showed how deeply rooted this hyporgonia was, for it gave way only very gradually and there was a great tendency to relapse. In other words, *the coherence of the plasma in the erythrocytes was weak, and the tendency to putrefaction correspondingly great.*

The attacks of weakness did *not* cease with the re-establishment of the *normal* blood reaction, although they became much less frequent, of shorter duration, and did not force the patient to keep to her bed for months. The anorgonia, then, could not be ascribed exclusively to the bio-energetic weakness of the blood system. Apparently, the anorgonia can affect special organs and organ groups and thus create disturbances in the respective organ functions and give rise to local malignant growths. But, as this case shows, the anorgonia may also exist without tissue disturbances, that is, in a purely functional manner.

Our patient was able to eliminate every attack of weakness by using the orgone accumulator. Nevertheless, the tendency to anorgonia persisted for over two years after she had become well.

We are dealing here apparently with a *disturbance of the functioning of the total body orgone*, independent of any mechanical or physiological *organ* disturbances which may accompany the

anorgonia. It is necessary to assume the existence of such a total and independent anorgonia.

Anorgonia is not identical with the condition of plasmatic contraction which we find in vascular hypertension; true, it may accompany or follow muscular and vascular hypertension, but it may also appear *without* hypertension.

Anorgonia is not identical with the carcinomatous shrinking process, either; although the shrinking, in the last analysis, always leads to anorgonia and death, anorgonia does not necessarily lead to the shrinking. I have observed anorgonotic conditions in cases where there was no question of shrinking of the autonomic life apparatus.

The hypertonia of the life apparatus has to be thought of as a biophysical contraction which fights against vigorous impulses originating from the biological nucleus. Shrinking biopathy is accompanied by a *decrease* in the impulses from the nucleus; there is a *gradual* slackening of the pulsatory impulse functions.

In anorgonia, on the other hand, we are dealing with a *sudden* failure of motility, as in fright paralysis which most likely represents *acute* anorgonia in the purest form. All the cases described so far showed the acute anorgonia *alongside* the gradual shrinking process: Our first cancer patient collapsed in the laboratory at a time when she was getting well and was gaining weight. The patient with the cancer of the prostate also collapsed one day during the period of getting better. Our third case, too, was suddenly overcome by anorgonia at a time when he was visibly improving.

Fright paralysis and vegetative shock suggest what we are dealing with: It is a matter of a *sudden cessation of the plasmatic functioning of the total organism.* If the acute anorgonia includes the cardiovascular system, death occurs.

Our patient disclosed a part of the mechanism which is the basis of the block of plasmatic motility. She came to orgone therapy for the elimination of the biopathic background of her latent leukemia. For several months she made excellent progress so that she almost forgot about her illness. Then one day, suddenly, the old disease picture returned in its full strength, as if nothing had been achieved in the meantime. This was precipitated

by the occurrence of vigorous but strongly warded-off genital impulses. At the moment when these impulses announced themselves in the form of sensations of streaming in the vagina, there was orgasm anxiety and with that an anorgonotic state which lasted about 10 days and appeared quite alarming. This time, however, I was not hopelessly surprised. My earlier experiences with cancer patients had prepared me for this occurrence and I was able to take the appropriate measures. In concentrated therapeutic work—the patient came daily—I tried to eliminate the acute anxiety reactions which made the patient shrink from the *full experiencing* of her genital sensations and which made it impossible for her to let the orgasm reflex take its course. A wealth of infantile experiences which now were remembered showed that her mother had threatened dire punishment for any activity which might cause genital excitation, such as dancing, and had called such behavior that of a "whore."

I would like to stress this connection. It forms the key to an understanding not only of the biopathies in general, but to that of the shock-like anorgonia in especial. Needless to say, it is not a matter of the word "whore," but of everything which it represents socially, psychically, structurally and biophysically: Slight genital impulses which can always be controlled and repressed are not considered "whore-like," either by compulsive social moralism or by the armored structure. It is the vigorous natural impulse in the form of an *uncontrollable surge (lumination)* of the body plasma which is officially designated as immoral, criminal or "whore-like" and which is subjectively experienced as "loss of self-control."

This fact has far-reaching social and biopsychiatric consequences. The terms "pleasure anxiety" or "orgasm anxiety" are too weak and narrow to designate the bio-energetic storms which take place in an organism which is still armored and yet experiences the full orgastic plasma excitation. The consequences of this conflict between armoring and plasmatic orgastic excitation are extremely serious. They are a matter of life and death, far from being harmless "clinical problems." I hope I shall succeed in conveying the full seriousness of this fact.

It was again and again the anorgonotic paralysis which killed

my cancer patients who were already on their way to health. The three first-described patients all died at a time when they came up against the natural orgastic excitation and plasma stasis. In the fourth case, I succeeded in averting the disaster. The fifth case, to follow, will set the danger of anorgonia into even sharper focus.

In this patient, the first signs of the disease began between the ages of 12 and 14, that is, in early puberty. The first sign was a pulling pain in the left hip which, intermittently, lasted for several years. Somewhat later, there were attacks of pain in the chest which recurred at very frequent intervals for about 10 years. The diagnosis was *"pleuritis."* An Xray of the lungs taken at the age of 22 showed *"healed tuberculosis."* At the age of about 13, generalized *"rheumatic and neuritic pains"* set in which, also intermittently, lasted for about 15 years. At the age of 12, a tonsil operation was done for *"tonsillar infection."* At the age of 15, there was an inflammation of the salivary gland (parotitis). At the same time, the patient suffered from violent pains in her big toes which often took on a livid discoloration; apparently, a matter of *angiospastic* attacks. The patient had suffered from severe anxiety states since early childhood; at the age of about 19, these increased to acute attacks of violent palpitation. At the age of 15, she had an "infection" of the jaw and the roots of her teeth, as a result of which a large part of the lower jaw, with 9 teeth, was re[illegible]cted. Now, the diagnosis was *"osteomyelitis."* Between the age of 16 and 20, there were various intestinal complaints, diarrhea alternating with constipation; also febrile periods and a general weakness and fatiguability which continued up to the beginning of vegetotherapy.

At the age of 19, there was such an increase in the pain in both inguinal regions that she was operated on, this time for *"appendicitis."* After the operation, she suffered continuously from high temperatures which were accompanied by *"diarrhea."* The attacks of diarrhea went with cold shivers. The condition ended in a *"nervous breakdown."*

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The febrile temperatures continued. The diagnosis, again and again, was "*infection.*" Between the ages of 24 and 27, the findings of "*anemia*" and "*enlarged liver*" were made. For a time, there were intestinal hemorrhages with every act of defecation. Two years later, a hospital diagnosed "*amebic dysentery*" and she was operated on for "*hemorrhoids.*" At the age of 30, a third tonsil operation was done because of "*pus.*" A year later, the patient developed an increased urge to urinate. She was again operated on, this time because of "*multiple benign tumors,*" the body of the uterus and one ovary with a cyst were removed. Soon after this operation, "*gastric ulcers*" were diagnosed. Two years before the beginning of orgone-therapy, a pus-producing fistula opened in the middle of the abdomen.

The gynecological findings were as follows: Two finger introitus. Urethra, Bartholin's and Skene's glands free. Cervix in axis. Uterine stump freely movable, no stump exudate. Left adnexa cannot be felt, have apparently been extirpated at the time of the supracervical hysterectomy. The right tube is normal. The right ovary extremely small. Speculum examination shows severe inflammatory changes due to trichomonas infection in an atrophic vaginal mucosa. Of other physical signs I mention only the cystic mastitis.

The diagnosis of the gynecologist was "*dysfunction of the endocrine glands*" as the cause of the many infections.

Let us not go into the tragicomedy of this history of suffering. There is an infinite number of patients who, all their lives, go from physician to physician with their acute organic diseases, without being hypochondriac neurasthenics. Such patients receive not only different diagnoses on the basis of their different symptoms; also, different physicians treat one and the same symptom in various manners on the basis of different diagnoses. The mechanistic disaster in internal medicine is characterized by the fact that medical understanding has given way to diagnostic slogans, among which two stand out: "infection" and "dysfunction of the glands." Whether the knife or vitamins are used, the basis of the misery is always the use of mechanistic slogans. The bacillus "in the air" has become an imp no less than the chemical stuff in the

endocrine gland. The knife in particular represents the extreme in the disastrous mechanistic view of the organism. One does not ask *why* it is that the ligaments in the parametrium become shortened, *why* it is that tumors develop in the uterus, *why* it is that "air bacilli" can settle in all kinds of organs; one blithely assumes an infection of the vagina with protozoa, although no such protozoa can be demonstrated "in the air"; in brief, the great medical discoveries concerning infection, internal secretion, etc., have been degraded into a ready-made scheme which not only blocks the way to new problems but which also destroys innumerable human lives. Is it reasonable to assume that this patient suffered from a dozen diseases? Certainly not. *In reality, she suffered from one single disturbance,* a disturbance of the function of plasmatic pulsation. The individual diagnoses are not important here. When the body plasma *as a whole* does not properly function, then there will be organs which are poorly charged, so that bacteria can settle in them; then the glands of internal secretion will function poorly; then muscles will become chronically contracted so that they pull on ligaments; then the vaginal mucosa will undergo atrophy, etc.

Imagine a building contractor who, in the course of 20 years, makes the following findings in a house which was built on sand: cracks in the chimney and ceilings, warped floor, injury of a child by a falling lamp, break in a water pipe, and seepage of water through the walls. What would be done with a contractor to whom it would not occur that the house is built on unsafe ground and that this is the reason for all the disturbances? Yet, the mechanistic splitting up in the diagnosis of somatic diseases is in no way different from the procedure of this contractor. Mechanistic slogans like "infection," "grippe," etc., disguise the fact that the causative agent is neither known nor demonstrable. If, as an orgone therapist, one sees colds, rheumatic pains, or pains in the pleura develop as soon as the respective part of the body becomes contracted, one must needs think of the possibility that infections may be the *results* of biopathic disturbances of function. This is an obscure field in which *everything* remains to be done. We will have to learn to consider the orgonity of the

organism as at least as important in epidemics of cholera, typhoid, poliomyelitis, etc., as the specific micro-organism. Since it has been established as a fact that specific micro-organisms can develop *autogenously, through degeneration of body cells,* the "bacillus" takes its place in the general disease process as its *result* as well as its *cause.*

The tumors of the genital apparatus which necessitated the hysterectomy, and the tendency to tissue destruction through putrefaction, make this case similar to case 4. The attacks of fever and weakness point to a severe disturbance of the biological energy equilibrium. True, with the exception of the genital tumors, the precancerous symptoms were slight; nevertheless, they were marked enough to justify the contention that the patient would have died of full-blown carcinoma. Just as the psychiatric vegetotherapist assumes the development of a psychoneurosis when he sees acute anxiety attacks, so, in cancer pathology, can one foresee the development of a cancer biopathy when its precursors make their appearance. It will be one of the tasks of *cancer prevention* to recognize the precursors of the disease as early as possible and to eliminate them. This is possible by orgone therapy.

I shall now proceed to the patient's reactions in orgone therapy: The thorax was immobile in the typical manner, respiration was shallow, the musculature of the neck tense, the spine lordotic, and the pelvis "dead." The facial expression was that of a grimace-like, stiff smile; it was not difficult to see a deep depression and impulses to cry behind this mask.

The dissolution of the superficial inhibition of respiration immediately resulted in body impulses composed of violently jerky, *pushing* motions. This pushing soon assumed the form of a hateful defense against a sexual attack, the face being distorted with hatred: *the orgasm reflex had assumed the function of expressing hatred of sexual motions.* Between the ages of 6 and 16, the patient had often been sexually abused by her older brothers. On these occasions, she had been excited and defensive at one and the same time. The excitation forced her again and again to allow it; the defense had become somatically anchored in the "pushing away." In this way, her orgasm reflex had assumed its special form.

I shall pass over the many details of the infantile history and confine myself to the anorgonia. It is unimportant what early experiences caused the anorgonia, since there are *no specific* experiences which do so. Anorgonia is a purely biological reaction to a chronic block of the orgasm function. What is likely to be *specific* in anorgonia is the conflict between *very vigorous* natural genital impulses and equally vigorous *disruptions* in the course of the orgasm reflex. I would like to venture the assumption that children who do not develop a particularly strong genital orgonity will also tend less to anorgonotic states; this assumption, I would like to emphasize, is very tentative. But to return to our patient.

As long as the body contractions had a hateful character, the work proceeded in the usual manner. This changed, however, when the contractions became softer, more "giving in," and consequently *pleasurable.* To the extent to which the expression of hatred disappeared and the motions became pleasurable, the movement of the pelvis changed its direction. Previously, the pelvis would move *backwards* during the contraction, would "push away." Now, *forward* movements appeared in the pelvis. As was to be expected, preorgastic sensations soon appeared in the pelvic floor. At the same time the inflammation of the vaginal mucosa receded; microscopic examination of the vaginal secretion showed a reduction of the trichomonas parasites, most of which were immobile or even disintegrating. From then on I could see over a period of months how genital coldness went with an increased formation of protozoa, while, conversely, genital excitation went with a decrease in protozoa formation. This is fully in accord with the orgone-biophysical contention that protozoa form in the organism only in the case of orgonotic weakness in the respective organs, and that they disappear with strong orgonity. Since the trichomonas protozoa develop from bionously disintegrating vaginal or cervix epithelium,[2] the relationship with the orgonotic potency of the tissue is understandable.

As long as the plasmatic currents in the vagina were weak, the course of treatment did not differ from the average. This changed,

[2] The organization of *Trichomonas vaginalis* from the vaginal epithelium has been demonstrated microscopically and recorded on movie film.

however, when the patient felt the first strong surge of sexual excitation. One day, she gave in more than usual, and a strong wave of excitation appeared in the lower part of the body. Suddenly, *she was unable to move or to talk; she did not answer when spoken to; she was unable to get up; there was a flaccid paralysis of the limbs.* The picture as a whole was alarming: The skin of the neck and the upper body was bluish and patchy as in vegetative shock. The body did not react to such stimuli as pinching. However, the patient was not unconscious; after the anorgonotic attack she related that everything around her had been "black," that suddenly she no longer felt her body and had thought she was "dying."

The attack corresponded to acute anorgonia. The reflexes, as well as tactile and pain perception, were present, but *motility was lost.* The anorgonia lasted for about 40 minutes. I helped the patient to sit up, but she sank back helplessly. After an hour she was able to get up by herself, with considerable effort; but when she did, *her knees collapsed.* After another hour of rest, she was finally able to go home by herself.

During the next session, the patient was again armored very strongly. When the armoring was loosened, the anorgonia recurred; this time, however, it was less intense and did not last so long. The patient described the attack as "fading out." From then on I was able to produce the anorgonia at will; it was sufficient, for example, to move the head to the side or backwards to produce it.

It is important to note that these attacks were *not* accompanied by anxiety. Gradually, the connection between anorgonia and orgonotic current became clear. One of the patient's defense mechanisms was that of a superficial jocularity which served to ward off serious feelings. Another mechanism was that of "going dead" when her emotions became too strong. The anorgonotic attack, then, represented a *third* mechanism.

The superficiality in the character and the affect-lameness represented the *superficial armoring;* the real *depth* mechanism was the anorgonia. In the course of the ensuing months, it became clear that the anorgonia had always been functioning, though subter-

raneously; it had resulted in the attacks of weakness as well as in the diverse suppurative processes. The anorgonia failed to occur when the patient let herself experience sexual excitation, and it recurred immediately when the excitation was not allowed full swing, when, in other words, it was arrested while increasing.

The anorgonia was accompanied by dizziness and falling anxiety. It would either develop "superficially," stretched out over days, as it were, or else "deeply," that is, acutely and in full force. As in case 4, the use of the orgone accumulator usually eliminated the attacks of weakness. The bringing about of the orgasm reflex, also, relieved it.

The mechanism of anorgonia in this case is completely in accord with that of the cases described earlier: *The organism reacts to a strong and unaccustomed plasma excitation with a block in motility* which expresses itself in "weakness," "collapsing," "fading out," disturbance of equilibrium and falling anxiety. *It is as if the orgonotic expansion would start but would not be able to take its full course, as if the impulse to expansion became suddenly extinguished.*

In the course of the treatment, the patient remembered a number of childhood situations in which such attacks of weakness had occurred. For example, when she had the impulse to show her father affection, she would feel "as if paralyzed." The exploration of the details of this situation left no doubt that what paralyzed her was an extremely strong sexual excitation which started to break through. The father was a hard, cold person, which seemed to make the sensation of sexual currents in his presence a horrendous occurrence. *Her paralysis expressed the helplessness of the child which wanted to express love without being able to prevent the* PHYSICAL *sensation which accompanies the expression of love.* The result was a block in motility and an attack of weakness.

It was even possible to localize the block of motility: When the orgasm reflex became more intense and spread from the thorax to the abdomen, the patient developed a peculiar reflex action: *She literally collapsed below the umbilicus; the legs were pulled up rapidly, the upper part of the body jerked forward; both*

hands grabbed for the lower abdomen as if in pain. Gradually it became clear—and *palpation of the abdomen confirmed it*—that the wave of orgonotic excitation, on its way to the genital, became stopped by a spasm of the intestines. This took place *precisely at the place where the suppurative fistula had broken through the abdominal wall.* (The fistula had healed in the meantime under orgone treatment.) It is clear, then, that the abdominal organs became spastic as soon as waves of excitation moved toward the genital. This is how her abdominal pains, her colics, diarrhea and constipation had originated. What is less clear is the histological mechanism by which such spasms produce tumors in the uterus or the intestines. However, the causation of benign genital tumors by spastic conditions of the abdominal organs cannot be doubted.

In the course of two weeks of hard work on this block in the lower abdomen, the condition ceased. The orgasm reflex was no longer jerky but became soft; soon there occurred the typical "melting" sensations of current in the lower abdomen and the patient, for the first time in her life, experienced preorgastic sensations of current in the genital during the sexual act. With the elimination of the block in motility, the acute anorgonotic attacks disappeared also, though the mild, stretched-out states of weakness continued to persist.

In this way, therapy confirmed the concept of anorgonia.

The anorgonotic paralysis is now satisfactorily defined, symptomatologically and dynamically. It comprises those conditions which heretofore led a Cinderella existence in pathology under the name of "functional paralyses." They now become understandable as disturbances in the functioning of a concrete biological energy, instead of as "hysterical" or mechanical lesions of the nerve tracts.

What is more difficult is the differentiation of the anorgonia which *results from gradual plasmatic shrinking* from the anorgonia which sets in acutely. *Does anorgonia consist in a loss of organismic orgone, or merely in a block of motility of undiminished orgone?* Mild anorgonotic states of weakness are easily distinguished from acute attacks of anorgonia. The principle must be assumed to be the same in either case. We must assume that anorgonia of the type of acute attacks can develop into a chronic shrinking process; and that, conversely, chronic anorgonia can end in acute functional paralysis. The organism may resign and finally shrink if its impulses to expansion cannot function; and it can cease to expand when the organism is subjected to gradual orgone loss. *The common denominator is, biophysically speaking, the inhibition of the function of expansion, or, psychologically speaking, the inhibition of the pleasure experience.*

The next question is the following: How far back does this disturbance reach in the developmental history of the organism? In all 5 cases we were able to find traces of anorgonia, slight and transitory attacks, as far back as early childhood. *The origin of anorgonia cannot be set at too early a period.* It is likely that the functions of the body orgone acquire their characteristics in the course of *fetal development.* This does not by any means imply "heredity"; it simply *shifts the problem to the period before and shortly after birth.* It is important to remember that the constitution of an organism results from a development, that it does not exist, "ready-made"; furthermore, it had to be assumed that the *development* of the biophysical constitution lasts beyond birth to about the end of the first year of life.

Just as the prevention of disease cannot be started early enough, so must the study of the biophysical constitution go back as far as to the formation of the embryo. This is made possible, in principle, by our knowledge of many functions of the orgone.

Scientific progress is based on the reduction of empirical facts to primary causes and on the progressive unification of these causes. Freud's psychopathology considerably reduced the importance of the imp, "heredity," by his discovery of early infantile libidinal development. The findings of psychoanalysis are based on observations of children from the age of about two up.

Orgone research goes beyond this. Orgone therapy of schizophrenic characters leaves no doubt that the central mechanisms of a later schizophrenia are established within *the first few weeks*

of life. To learn more about this is of vital importance. The language of motility, the organ language and the language of emotional expression used in orgone therapy is, phylogenetically and ontogenetically, older than the language of the word and of the idea which forms the tool of depth psychology. Unlike the language of the word and the idea, the language of bodily expression does not begin at a certain age and is not restricted to the human animal. The language of bodily expression is a function of the animal world in general, even though we have not yet learned to understand it. In this way, living functioning becomes accessible to orgone physics *before the first year of life in the human, and in the animal generally*, for emotion and motor expression are based on plasma motility.

I shall postpone an exposition of the results of experimental orgone therapy in schizophrenics until another time, and shall conclude this report on anorgonia with a description of the expressive language of a newborn child. It will be shown that the early beginnings of anorgonia are in fact to be looked for in the period before and after birth.

2. FALLING ANXIETY IN AN INFANT OF 3 WEEKS.

Recently, I had an occasion to observe the development of falling anxiety in an infant of 3 weeks. This observation filled a gap which the study of cancer biopathy had left open.

This infant was born into an environment in which the expressive language of the organism is professionally understood and handled. For this reason, it was all the more baffling that the parents felt helpless in the face of the infant's gesture language; during the first few weeks, they felt that one knows *practically nothing* about the emotional life of the newborn. Purely mechanical care, it goes without saying, does in no way satisfy the *emotional* needs of the infant. He possesses only *one* form of expressing needs, that is, *crying*. This *one* form covers innumerable small and great needs, from the pressure of a diaper crease to colic. The expressive language of the infant finds no response in the environment.

I shall not go into any of those injurious methods of infant care

which modern education has effaced, or is still trying to efface, from the earth: rigid allotment of food quantity and of feeding time as instituted by Pirquet, violent extension of the legs by tight swaddling, as was customary some 30 years ago, denial of the breast during the first 24 hours, as still practised in many hospitals, overheating of the nurseries, the mechanical routine handling of infants in large institutions, the "letting them cry themselves out," etc. Such measures of force are the expression of a life-inimical attitude on the part of parents and physicians. They do lasting damage to the biological self-regulation of the organism shortly after birth and lay the basis for a later biopathy which is then misinterpreted as hereditary. All these things are already common knowledge today although not yet common practice in infant care.

I shall confine myself here to *one* definite harmful influence during the first few weeks of life which has hitherto been neglected: *The lack of orgonotic contact between mother and infant.* This lack of contact may be of a direct physical or it may be of a psychic nature. It goes without saying that the infant's language of emotional expression will be the better understood the fuller the orgonotic contact.

The pre-eminent place of contact of the infant's body is the bio-energetically highly charged mouth and throat. This organ immediately reaches out for gratification. *If, now, the mother's nipple reacts to the sucking movements in the proper biophysical manner with pleasure sensations, it becomes vigorously erect, and the orgonotic excitation of the nipple combines into a unit with that of the infant's mouth, just as in the orgastic sexual act male and female genital luminate and fuse orgonotically.* There is nothing "peculiar" or "repulsive" in this. Every healthy mother experiences the sucking pleasurably and gives herself over to the experience.

There is the other fact, however, that about 80% of all women suffer from vaginal anesthesia and frigidity. Corresponding to this fact, their nipples are either anorgonotic, that is, "dead," or the mother reacts to the pleasurable sensations which the sucking arouses in the breast with anxiety or disgust. This is the reason

why so many women refuse to nurse their babies. This situation has further consequences. An anorgonotic breast functions poorly physiologically, that is, *the milk production is disturbed.* As a result, the excited mouth of the infant either meets a "dead" nipple so that he fails to get satisfaction, or the mother, because of her phobia of nursing, relegates the infant to the non-excitable rubber nipple of the bottle.

The emotional disturbances of the plasmatic currents in the mouth, neck and shoulder regions which one finds in the biopathies leave no doubt that these defects on the part of the mother result in a severe damage to the orgonity of head and neck. Speech disturbances, emptiness of emotional expression, eating disturbances, spastic hysterical vomiting, fear of kissing, depression, stuttering, mutism and similar disturbances are an expression of the poor orgonotic function of the mouth and throat.

So much about the first physiological contact of the infant with the world. We shall proceed now to the emotional contact, which is determined directly by the orgonotic contact. The infant has no other means of expression than the various forms of motion (grimaces, movements of arms, legs and torso, expression of eyes) and the crying. The contact of the mother with the infant is governed not by language but by the motor expression: the adult perceives the infant's motor expression through orgonotic contact (psychologically speaking, by identification). If the adult's own motor expression functions well, he will also comprehend the infant's expression. If, on the other hand, he is armored, hard in his character, pleasure-shy or otherwise inhibited, then his understanding of the infant is severely limited, which will inevitably impair the emotional development of the child in various ways. The need of the infant can be satisfied only if one understands the infant's expression. It is not always easy to know immediately what the infant wants.

Every newborn has its own characteristics, its own *basic trait;* without understanding this one cannot understand its individual emotional reactions. The infant in question was characterized by an *"earnest looking."* This "looking expression" was fully developed a few minutes after birth: the newborn baby looked with

his eyes wide open and with the *expression* of seeing. He took to the breast immediately and sucked vigorously. In the first week, he cried very little. In the second week he cried much, and the people around him were unable to understand the reason for the crying. The pacifier did not always pacify. I often had the impression that the child wanted *something definite* but I did not know *what.* Only two weeks later did I understand that what he wanted was *bodily contact.* This I will have to explain in some detail.

During the few hours in which the baby was awake he would follow with his eyes the red, moving lines painted on the wall of his room. He distinctly preferred the red to the blue or green color: his gaze would remain longer on the red, and the expression of looking was more intense.

At the age of two weeks, the infant had his first orgastic excitation of the mouth region. This occurred while he was nursing: the eyeballs turned upwards and sidewise, the mouth began to tremble, as did the tongue; the contractions spread over the whole face; they took about 10 seconds, after which the musculature of the face relaxed. To the parents, this manifestation seemed only natural. But we know from practice that many parents get frightened when the mouth orgasm occurs in their child. During the next four weeks, this orgasm of the facial musculature occurred several times more.

At the end of the third week of life, there was an acute *falling anxiety.* It occurred when the child was taken out of the bath and put on his back on the table. It was not immediately clear whether the motion of laying him down had been too fast, or whether the cooling of the skin had precipitated the falling axiety. At any rate, the child *began to cry violently, pulled back his arms as if to gain support, tried to bring his head forward, showed intense anxiety in his eyes and could not be calmed down.* It was necessary to take him up again. At the next attempt to put him down, the falling anxiety appeared again, in the same intensity. Only when taken up did he again calm down.

During the next day, the right shoulder blade and the right arm were found to be pulled back and less mobile than the left arm.

There was a definite contraction in the musculature of the right shoulder. The connection between this contraction and the falling anxiety was clear: *During the anxiety attack, the child had pulled back both shoulders, as if to gain a hold.* This muscular attitude persisted now *even in the periods free of anxiety.*

I believe this happening to be of great significance. In trying to explain it, we must first exclude several things:

It could not be a matter of genital orgasm anxiety as in patients after puberty. Neither could it be a rational fear, for an infant of three weeks' age has no concept of "falling," of "high and deep." Nor could it be a *psychoneurotic* falling anxiety, for before the development of *word* language there are no concepts, and without concepts there can be no phobia.

The psychoanalytic explanation of "instinct anxiety" which is used in such cases is unsatisfactory, for we would have to *ask which kind of an instinct was warded off?* There is at this age no moral ego, and, according to psychoanalytic theory, there can be no instinct anxiety unless there is a moral defense present. The anxiety cannot be a "danger signal of the ego" because there is no "ego."

Rationalistic as well as psychological interpretations, then, leave us in the lurch. *How can an acute anxiety attack come about in a child three weeks of age if there is neither a consciousness of a danger of falling nor a defensive anxiety signal of the ego?* We certainly will not take recourse to the assumption of an "archaic, inborn instinct anxiety"; that would be too easy and would not mean anything. *An anxiety attack is a functional disturbance and can be understood only from the orgonotic body functions.*

Let us attempt a biophysical interpretation: If it is not a matter either of a fear of danger or a defense against an instinct, there remains nothing but the *pleasure-anxiety-mechanism of the orgonotic body system,* a mechanism which, as we know, begins to function with the first plasmatic motion. In my monograph, Psychischer Kontakt und Vegetative Strömung (1935)[3] I assumed that *the sensation of falling comes about purely biophysically*

[3] Published in English as an appendix to my book Character-Analysis, Orgone Institute Press, New York, 1945.

through a sudden withdrawal of the biological energy to the biophysical center. It is a matter of a kinesthetic organ sensation as it occurs with actual falling, in fright and with sudden inhibition of orgastic expansion. As I have shown clinically, *orgasm anxiety* is always based on *falling anxiety;* the rapid and extreme convulsion in the orgasm is experienced as falling *if it cannot take its course* freely. In contrast, the free, uninhibited orgastic convulsion conveys the sensation of *floating* or *flying.*

Now, the withdrawal of bio-energy from the body periphery means an anorgonia of the extremities; the anorgonia of the supporting organs goes with loss of the feeling of equilibrium.

Falling anxiety, thus, is not a "psychic formation" but the simple expression of a sudden anorgonia in those organs which maintain the body equilibrium by *opposing* the force of gravitation. Whether falling anxiety and anorgonia are precipitated by sudden orgasm anxiety, by actual falling or by a fright contraction, the mechanism is always the same: *loss of peripheral plasma motility, and with that loss of the feeling of equilibrium and of equilibrium itself.* The *experience* of anxiety is an automatic biophysical result of the *sudden* contraction of the plasma system. However, the orgonotic contraction goes with *loss of plasma motility in the periphery,* and for *this* reason expresses itself as fear of *falling.*

The effect is, of course, the same whether the immobilization takes place as a result of a secondary pleasure block or as a result of a primary anxiety contraction: *the sensation of falling is the immediate inner perception of the immobilization of the body periphery, of the loss of equilibrium.* It follows that the equilibrium of a body in the field of gravitation is a function of the full orgonotic pulsation in the periphery of the orgonotic system.

At this point, I must mention an observation which supports this interpretation: A boy whom I knew had caught a squirrel which he held in his hand. I was struck by the fact that the squirrel lay there in the hand completely flaccid; it did not move, or fight or bite: it was *paralyzed with fright,* it had an *acute anorgonotic attack.* After a few minutes, the boy put it down on the ground. At first, it continued to lie there immobile, as if dead.

Then it tried to get up, but fell down again; in terms of physics, it was not able to overcome the pull of gravity. These attempts to get on its legs were continued for about 15 minutes, without success. It was not injured, for later on it was perfectly able to run and climb. The disturbance of equilibrium and the continued falling down increased the anxiety, which in turn led to further falling down. For some minutes, the whole body convulsed in sudden contractions which were so violent that it was thrown into the air as high as several inches. Finally it recovered from the attack and retreated to some bushes; after having rested there for a long time, it ran off.

But to return to our infant. Can we surmise the *cause* of the anorgonotic attack? I think we can. As I mentioned before, *for a period of about two weeks the orgonotic contact of the mother with the baby was poor;* apparently, the baby had strong impulses toward contact which remained ungratified. Then occurred the orgasm of the mouth region, in other words, a perfectly natural discharge took place of the high-pitched excitation of the head and throat region. This increased the need for contact even further. The lack of contact led to a contraction, to a withdrawal of biological energy as a result of unsuccessful attempts to establish contact. If it were permissible to use psychological terms here, one would say that the child "resigned," that it was "frustrated." The "biological resignation" led to anorgonia and with that to falling anxiety. I may remind the reader of case 5, in which the same mechanism governed the biopathy.

My attempts to master the falling anxiety in the infant were successful. If my conclusions were correct, three things were required:

1. *The child had to be taken up and held when he cried. This helped.* After three more weeks, the falling anxiety no longer occurred. With the falling anxiety, a fear of strange people had also appeared. *Before* the first attack of falling anxiety, the child had always liked to be taken up by strangers; *after* the attack, he would become anxious and would cry when somebody tried to take him up. He also had once reacted with anxiety to a dog which appeared unexpectedly.

2. *The shoulders had to be brought gently forward out of their backward fixation in order to eliminate this first beginning of a characterological armoring in the shoulders.* Playfully, with laughter and sounds which the baby loved, I moved both shoulder blades forward; this was done daily for about 2 months, always in a playful manner.

3. *It was necessary actually to "let the child fall" in order to accustom him to the sensation of falling. This also was successful.* Holding the child under the armpits, I would lift him and then lower him, slowly at first, then increasingly quickly. At first, the child reacted with crying but soon he began to enjoy it. He even developed a kind of game from it: he made "walking" movements with his legs. He leaned against my chest and looked up toward my head. I understood what he wanted: *to crawl up on me;* arrived above my head, he would squeal with pleasure. In the succeeding weeks, the climbing up and "falling" became a favorite game.

The first biopathic reaction had happily been overcome. During the ensuing 6 months, no trace of falling anxiety could be detected.

It is important to follow the development of this infant over a terrain which has an *immediate* connection with biopathic shrinking: *If the carcinomatous shrinking of the adult organism has its roots in a chronic contraction and resignation acquired at an early time, it follows that the prevention of the shrinking biopathy is a matter of an undisturbed development of the life impulses during the first few months of life.* True, it would be simpler and more acceptable if a drug could be discovered against the carcinomatous shrinking process. Since this is not possible, the problem is and remains that of a *sex-economic upbringing of infants.* There is, as far as I can see, no other way. As we know, this has serious social consequences.

Our starting point was the lack of understanding on the part of the adults for the expressive language of the newborn. This lack is deep and quite general. The parents of our infant believed themselves to be very understanding when they let their child determine himself when he should be fed and how much he

should get. As early as the fourth week of life, they noticed that the child was restless, which expressed itself in frequent crying. At first, they did not understand. Gradually, the simple insight dawned on them that it is indeed extremely boring to lie in a crib or carriage alone, many hours each day, *for months* on end, with high walls to the crib on both sides, and a roof above.

The aliveness of the newborn requires aliveness of the environment. I mean aliveness not only in the expressive language of the adult, but *movement in the strict sense of the word.* The infant prefers alive colors to dull ones, and moving objects to stationary ones. If the infant is placed in a higher position so that the walls of the carriage do not obstruct the view and if one removes the roof, the infant can observe his environments; he will show glowing interest in people who pass by, in trees, shrubs, posts, walls, etc.

The concept of the "autism of the infant," of his "being withdrawn into himself," is widespread. Nevertheless, it is *erroneous:* the autism of the infant is an *artifact* resulting from the behavior of the adults; it is *artificially produced* by the strict isolation of the infant and by the character armoring of the persons who take care of the child as well as of the theorists of nursing. It is understandable that the infant will not reach out toward the world if the environment does not meet him with alive warmth but only with rigid rules and spurious behavior.

It is true that today most newborn infants are quiet and withdrawn. But are lordosis or anxiety neurosis natural merely because they are so widespread in occurrence? As long as parents, physicians and educators approach infants with spurious, stiff behavior and rigid concepts, with dignity and condescension instead of with orgonotic contact, so long will infants be quiet, withdrawn, apathetic, "autistic," "queer," and will they later be "wild little animals" which, the cultivated ones feel, must be "tamed."

All the political talk notwithstanding, this world will not change as long as the adults cannot cease to let their own deadness take effect on the still unspoiled plasma system of the infant.

An infant does not respond with any expression either to sweet-

ish "baby talk" or to the strict language of the adult. *He responds only to an intonation of the voice, to the pitch of a voice and to a language which corresponds to his own nature, things with which he can establish a connection through his expressive language.* It is possible to evoke in an infant of a few weeks vivid pleasure and lively responses if one talks to him in *his* guttural sounds, if one makes *his* motions, if one has, above all, a lively contact oneself. Spurious behavior on the part of the adult inevitably forces the child back into himself. The fact cannot be emphasized enough that in this respect 90% of the people in general are still deaf and blind, thus creating biopathic constitutions day in and day out.

Disturbances of inner secretion and of the so-interesting enzyme functions are *results* and *symptoms,* and *not* the causes of the later diseases of the biosystem. This must be correct if the mechanico-chemical standpoint of biology is incorrect—*and it is incorrect.* That is proved by the deplorable state of general health everywhere on our planet.

We should not be too surprised at the East-Indian, Japanese or any other kind of Asiatic authoritarian upbringing of small children. In fact, with us, in the "cultured West," it does not look much better. Only the methods of "taming the wild little animals" are different. The old-spinster spirit which does not tolerate anything alive around it is the same. In another 20 to 50 years it will be a matter of course that those who take care of children experience love themselves, and that their organism must know the orgastic sensation and convulsion if they are to understand an infant. Today, this may still sound exaggerated; that does not alter the truth of the everyday observation that orgastically impotent educators form the greatest danger for the development of the child's organism.

The "autism" of the infant, then, his quietness, pallor, his being withdrawn, are an artifact of education, a product of his total social misery. Soon, it will be realized that such disturbances as diarrhea, whooping cough, etc., also belong here. This is not farfetched: if the intestinal function is of a vegetative nature—and it is—then the emotional, that is, orgone-biophysical faulty development of the infant must play a decisive role also in such

things as diarrhea, pallor, anemia and so on. It would be senseless to object here by pointing to the "social misery," for this social misery itself, in the last analysis, is a result of the rigidity of the animal, man, of a world which has ample resources for wars, but never sufficient resources—even amounting to a minimal fraction of what is expended in the war *in one day*—for the securing of living functioning. That is so because these shipwrecked, rigid human beings have no understanding of living functioning, only fear of it. In addition, no other kind of social misery can compare with the misery suffered by infants of biopathic parents.

It is a widespread misbelief that such functions as grasping, crawling and walking "are suddenly there," ready-made as if fallen from the sky. It is assumed that the child "simply" starts to grasp at the age of x weeks, to crawl at y weeks, and to walk at z weeks. One must marvel that the pediatricians have not yet worked out a schedule of the number of steps a child has to take every day, in the manner in which they worked out the number of daily calories. An alive, erogenously functioning nipple, a warm, contactful embrace of the infant beats any chemical prescription in stimulating digestion and the total body functioning. If there is contact between the infant and an understanding, warm, environment, then—and only then—can one observe *natural* processes, instead of artificial products of a pathological upbringing. Not until the educators are sexually healthy will the scientific statements about children be *correct*. A day should, and will, come when a statement will be judged *according to the character structure of him who makes it* just as today it is judged according to the elegance of the style or as a surgeon is judged by the technical skill of his hand.

As I just said, the framework for correct observations has first to be *created:* If the orgonotic contact is present, *one sees the various functions appear in the infant long before their "goal" is present.* The eye, for example, establishes contact with the moving fist; the motions of closing the hand develop long before the child really grasps an object. This has nothing to do with "grasping reflexes" thought of in a mechanical way. *The goal-conscious grasping develops gradually through the coordination of many*

diverse functions, that is, a coordination of the motions of previously uncoordinated organs. It is the contact of the eye movement with a pleasurable movement in the environment which gives rise to goal-directed *seeing*. Once the *act of seeing* is established, the function, which now is already complicated, seeks *new* pleasurable objects. Unpleasurable stimuli, which lead to contraction, do not form an act of seeing. It is all the unpleasure and anxiety which our infants experience which later lead to "dull eyes," "myopia," spasm of the lids and with that to a "dead" expression in the eyes.

What, in the face of these facts, is one to think of the mechanistic misconception that "seeing is the answer of the retina to a light ray"? Undoubtedly, it is that; but the reaction of the retina is merely a vehicle, a means of seeing. *Is the dancing of a child "merely" the contact of the feet with the floor or "merely" such and such a succession of muscular contractions?* Such questions disclose the emptiness of all mechanistic explanations of life.

The child looks at one in a different way when one smiles at him, and differently when one frowns at him. *What matters, then, is the motor expression of the plasma action,* and not individual stimuli, reactions or muscle contractions. The light ray which hits the retina always represents the same process of definite wavelengths. Nevertheless, the infant's eyes may be dull or shiny. This depends on the *turgor of the tissue,* which is increased by pleasure and decreased by anxiety.

If one has good contact with the infant one can develop the functions. At the age of about 14 weeks, the infant in question would make motions of walking, in a lying position, when I came near him, indicating that he wanted to "walk." He would shout with joy when I held him under the arms, letting him put down his feet rhythmically on the floor, so that he was "moving along." During this, he would look along the walls or the ceiling as if to convince himself that "locomotion" really took place, that is, that the objects moved past him.

Infants go through a phase of development characterized by vigorous activity of the voice musculature. The pleasure in shouting and the formation of various sounds is regarded as a patho-

logical aggressivity by a great many parents. Accordingly, the infants are admonished to be "quiet," not to shout, etc. With that, the impulses of the voice apparatus are inhibited, its muscles become chronically contracted, and the child becomes quiet, "well-behaved" and withdrawn. The results of such maltreatment soon become obvious in the form of eating disturbances, general apathy, pallor of the face, etc. We must assume that retardation of speech and speech disturbances are caused in this manner. In the adult, we find the result of such mistreatment in the form of spasms of the throat. What seems particularly typical is the automatic constriction of the glottis and the deep muscles of the throat, a contraction which inhibits the aggressive impulses in head and neck. Clinical experience demonstrates that one must let children "cry themselves out" when the shouting is a pleasurable activity. Many parents will find this inconvenient. But in deciding problems of education our concern must be *exclusively the interests of the child* and not those of the adults.

I trust to make it clear where I see the problem of the prevention of biopathic shrinking processes: *In the dependency of psychic and physico-chemical functions on the bio-emotional activity of the organism in the earliest phases of development.* Here, and only here, will one also have to look for a solution, and not in drugs or cultural theories of sublimation.

I emphasized the dependency of the psychosomatic functions on the *bio-energetic functions of plasma pulsation. Lively pulsatory activity from birth is the only conceivable means against chronic contraction and premature shrinking.*

Bio-energetic pulsation is a function which depends entirely on the stimuli from and the contacts with the environment. The character structures of the parents form the main part of this environment from the moment of birth. *In particular, the maternal organism plays the role of environment from the formation of the embryo until birth.*

I should like to talk now about the insights we have into the *prenatal* development of the organism. They are meager and not decisive. Much more has to be learned before we can make a

breach into the obscure problem of heredity. But the notes to follow are at least a beginning which may lead to further observations.

If we assume the beginning of a shrinking biopathy to take place in the phase of *embryonic development,* the first question is that of the influence on the fetus of the maternal blood, of the orgonity of her organism and in particular the bio-energetic state of the maternal genital organs.

The contractions of the chicken embryo as they have been demonstrated on movie film confirm the clonic-pulsatory nature of embryonic growth. *The vitality of an embryo is expressed in these contractions.* The bladder form itself indicates that what is at work here are the typical bio-energetic functions of protoplasmic protrusion as they are most easily studied in flowing amebae. We must assume that a uterus which is capable of contractions represents a far more favorable environment for the embryo than a spastic and anorgonotic uterus. Not only is the circulation of blood and body fluids more complete, and with that, the energy metabolism more rapid in a strongly orgonotic uterus; *the chargeability of the maternal tissue is transferred to that of the embryo which, after all, forms only a functional part of the uterine mucosa.*

Thus it becomes understandable why the children of orgastically potent women are so much more vital than those of frigid and armored women, a fact which is corroborated by everyday observation. What is customarily called "heredity of temperament" is essentially nothing but the effect of the maternal tissue on the embryo. In this manner, we gain for the first time access to a corner of the gigantic problem of the "heredity of character." Since the emotional functions are determined by the orgonotic energy function, it follows that the basic character is, to begin with, only a greater or lesser energy activity; in other words, *the temperament is an expression of the degree of pulsatory activity of the orgonotic body system.*

The "heredity factor," then, becomes tangible, in principle, as a quantitative energy factor. Naturally, a system rich in energy

will not as easily resign as one poor in energy. It follows that the energy weakness of an embryo is determined by the energy weakness of the maternal genital organs. Energy weakness may be thought of quantitatively as a decrease in orgonity, or functionally as a decreased pulsatory activity of the plasma. It must be assumed that the decrease in plasma pulsation in the embryo can secondarily lead to anorgonia. That is, the embryo need not be originally anorgonotic, even though the parents may suffer from a decreased orgone energy metabolism. We must assume both possibilities: *original* anorgonia in the embryo, or *secondary* anorgonia as a result of anorgonia in the maternal genital apparatus.

Let us follow this train of thought further. It remains, of course, for concrete observations to correct or amplify what is obscure here.

The embryo participates in the orgastic contraction of the uterus during the sexual act of the parents. The physiological and anatomical situation being what it is, this cannot be otherwise. The maternal orgasm during pregnancy extends to the embryo in the form of contractions. *Before* birth there are *growth contractions* which, bio-energetically, cannot be distinguished from orgastic contractions. To these are added the orgastic contractions which are aroused by the maternal orgasm. If there is, in addition, a high orgonity of the maternal organism before pregnancy, we have a picture of *favorable* bio-energetic conditions for the orgonity of the embryo. Hand in hand with this goes the genital character structure of the parents which later continues to develop, in the realm of *psychic* development, what the bio-energetic function has established in the embryo and continues to maintain later on. *After* birth, there is an independent orgasm of the head and neck regions in the newborn.

Since high orgonity causes vigorous expansive instinctual activity, a prevention of anorgonia is established. The development of a cancer shrinking biopathy or of anorgonia has become unlikely even though not impossible; for unfortunate experiences in later life may force even the most vigorous life apparatus into resignation and shrinking.

To return to our infant: The movements of the embryo were extraordinarily vigorous beginning from the fifth month of pregnancy; so vigorous as to cause the mother pain quite frequently. The obstetrician also noted that the heart sounds were extraordinarily strong. In spite of a difficult delivery (first pregnancy, premature rupture of the membranes, 20 hours of labor) there was no asphyxia at birth. To the end of the pregnancy, the blood of the mother was strongly orgonotic and completely free of T-bacilli.

To summarize: *High orgonity and orgastic potency of the parents, absence of anorgonia of the uterus, absence of T-bacilli and CO_2—excess in the blood—these are the biosocial prerequisites for a strong orgonity of the child in the embryonic stage.*

Conversely, *orgastic impotence of the parents, anorgonia of the uterus, disturbed tissue respiration, T-bacilli in the blood, hyporgonia of the blood, and muscular armoring—these are the disturbances of functioning which have now become tangible as causing a later anorgonia in the child.*

With that, the mechanistic and mystical theory of heredity has lost another piece of its ground to *functional* pathology. It is no longer a matter of a "hereditary disposition to cancer" which is beyond our control; it is a matter of life functions which can be influenced, a matter of energy quantities and of disturbances of pulsation. These disturbances, it is true, create a tendency to anorgonia but this tendency must not of necessity develop; favorable circumstances in later life may render the original damage innocuous. The living is very adaptable; it adapts to favorable as well as to poor conditions of life.

Orgone biophysics considers the period from the formation of the embryo to about the end of the first year of life the "critical period" in which the "constitution of the system of orgonotic functioning" is established. The core of this "constitution" is determined by the amount of orgonity and of the ability of the tissues to pulsate; these factors determine the extent of plasmatic impulse motility.

If we see the termination of embryonic development not at birth but at the time when all biological functions become co-

ordinated into a unitary *biosystem*, at the age of about 10 to 12 months, we have before us the critical span which determines the later bio-energetic functioning. The critical period of *"psychic"* development lies between the third and fifth year of life; its outcome is largely determined by the outcome of the *biophysically* critical earlier period. This biophysically critical period contains the solution to the riddle that, in every psychiatric treatment, after the working through of the pathological mechanisms, an *intangible* something remains: an unalterable hopelessness in general life activity, a resigned quietness, an irritability, in one word, what classical psychiatry calls "inborn disposition."

Many aspects of falling anxiety and anorgonia remain obscure. Neither anxiety nor anger are pathological manifestations of the life system. It is only natural that a child should experience anxiety when it falls or is attacked by a dog; only natural that the infant should express anger when its needs are not satisfied.

But falling anxiety is more than a fear of danger. It can occur long before there is any consciousness of danger. It is connected with rapid contractions of the life apparatus, is, in fact, produced by them. Just as actual falling causes biological contraction, so does contraction, conversely, cause the sensation of falling. We understand now why a *contraction* with orgastic *expansion* results in falling anxiety, and why falling anxiety appears when the muscular armor is broken down and the first plasmatic currents make themselves felt. *A contraction in the course of a plasmatic expansion disturbs the sensation of equilibrium.* But something remains unexplained. Let us try to define it, even though we cannot find a solution.

A basic function of the living orgonotic system is that it must oppose and overcome the pull of gravitation. The *dead* stalk of a plant is completely subject to the force of gravitation. The *living* stalk grows in a direction *opposite* to gravitation. (It goes without saying that this cannot be due to mechanical tension alone, for a *dead* stalk, even if full of water, remains lying, does not become erect). The flight of birds is based on the overcoming of gravitation. The erect gait of man requires a tremendous amount of balance *against* the pull of gravitation. We know that this balance fails when the unitary character of the motor functions is somehow disturbed. This motor disturbance may be of a purely mechanical nature as in the case of an injury to a leg or in tabes (locomotor ataxia); but it may also be of a *functional* nature. Anorgonia of the total body or of essential body organs means a disturbance of balance, and with that a tendency to fall and corresponding falling anxiety. Up to this point, it is clear. But the expression of falling anxiety in an infant of three weeks, precipitated by a cooling of the skin, remains somehow obscure. True, there is the function of rapid vascular contraction, but the *experience* of falling is lacking. Whence the *expression* of the falling anxiety? Recourse to a "phylogenetic experience" does not explain anything, for the phylogenetic experience must become effective in some *actual* anchoring. There is no memory function without an actual mechanism.

Here we have to renounce the ambition to understand *everything* about anorgonia and falling anxiety. For the time being, we shall be satisfied with the understanding of the *connection between the block of orgonotic pulsation on the one hand and the loss of the feeling of the organs and of equilibrium on the other.* The connection between orgonity and anorgonia on the one hand and gravitation on the other hand is obvious. In a state of anorgonia, the members are "heavy," motion takes place only with great effort. In the state of high orgonity, on the other hand, one feels "light," as if "floating." Such linguistic expressions are to be taken literally and seriously. *In anorgonia, less biological energy is free and active; the inert mass of the organism becomes greater, that is, heavier, in relation to the active energy which has to move the body. In a state of high orgonity, more bio-energy is free and active, and in relation to it the mass of the organism becomes lighter.* We are dealing with a genuine, *alterable* relationship between mass and energy in the biosystem.

This is as far as we can go at the present, unless we were again to take recourse to the metaphysical imp which is alleged to act, think, feel and react in the background of living functioning. That

would lead nowhere. Let us wait for a better opportunity to finally comprehend this obscure remainder. For the time being, it is sufficient to have comprehended how early and in what orgonotic functions the carcinomatous shrinking process with its anorgonia has its beginnings.

CHAPTER X

CANCER BIOPATHY AS A PROBLEM OF SEXUAL SOCIOLOGY

It will take years of intensive clinical study before we have a picture of the magnitude of the ravages which the emotional plague causes in the life system. This fact is all the more impressive in that the disturbed sex-economy in these cancer patients continues to be completely overlooked, no matter how obvious it is. Observation to date leads to the following general conclusions:

Deprived of the possibility of natural sexual functioning, the potential cancer patients develop a general character attitude of resignation. At first, there are only local and more or less harmless "disturbances" such as peptic ulcer or perhaps only gastric hyperacidity, hemorrhoids, a spasm in the throat, genital deadness, menstrual disturbances, and such. To an increasing extent, the chronic disturbance of biological functioning undermines respiration and pulsation in the tissues. Gradually they begin to undergo a slow process of disintegration in the direction of putrefaction. T-bacilli develop and accelerate the process, which is still a chronic process, stretched over years. Finally, protozoa begin to develop and a tumor becomes palpable or visible.

No matter how early the diagnosis of the local cancer tumor is made, it is *usually too late,* because in the meantime the biopathy has already done its work of destruction in the organism. The task of cancer therapy, therefore, is to influence the *general disturbance of functioning in the biosystem,* the furtherance of the B-reaction of the organism. Considering all things involved, this means: *As long as education and social conditions are going to produce resignation and muscular armoring* en masse, *so long is any radical elimination of the cancer scourge out of the question.* True, one will be able to eliminate a few more tumors and to save a few more lives. But one should not harbor the dangerous illusion that

one will ever be able to vanquish cancer with chemicals, the knife, or the orgone alone.

I know the strong tendency toward illusions only too well from personal experience. When I saw the effects of the orgone on the cancer tumors in mice, I heaved a sigh of relief. Finally, I told myself, an avenue of approach to cancer therapy is opened; now we can begin to cure cancer and perhaps even prevent it. Secretly, something in me was delighted at the prospect of finally getting away from the "cursed sex problem" and at being able to escape into the sex-free atmosphere of organic pathology. But I was wrong. *The facts did not let themselves be cheated.* They soon deprived me of the illusion of having found an easy way out.

Great tasks cannot be solved in easy ways. The difficulty of the path reflects only the difficulty of the task: I could not get away from the "cursed" sex-economy, and I have reason to be grateful to the facts for this.

These cancer patients brought again to my consciousness, in the sharpest focus, what I had learned to see for the past 28 years: *the pestilence of the sexual disturbances.* No matter how I tried to get away from it, the fact remained: *Cancer is living putrefaction of the tissues due to the pleasure starvation of the organism.* That this extremely simple fact had hitherto been overlooked was not alone due to inadequate research methods or the traditional errors of biology. I had hit upon it only because I had to be consistent as a sex-economist and had to follow the results of the sexual disturbances no matter where the search was going to lead. What has really prevented this discovery from being made long ago is the prevailing concept of life, the moralism, the sexual crippling of our children and adolescents, the moralistic prejudices in medicine and education, in brief, our blindness toward life and our fear of it, attributes which for thousands of years have been handed down from generation to generation. We have outlawed the most important life function, have given it the stamp of sin and crime and have denied it any social protection. We have tolerated, and still tolerate, the domination of the deadly enemies of natural love life: pornography, sexual gossip and defamation, sexual compulsion and medieval sexual laws. We still tolerate

smutty phantasies—be it in a moralistic-hypocritical way or in an open sadistic-pornographic way—to determine how our children should be brought up and whom we should love and embrace. We have lost confidence in the natural laws of life and now we have to pay the price for it.

Things being as they are, one has to marvel again and again at the vitality and power of resistance of the organism. One really has to marvel that the human organism does not perish much more quickly, considering the ravages of mechanism and mysticism to which it is subjected. Just this strength of the vital powers is our hope. If a maltreated organism takes decades before developing local malignant growths, then today's cancer terror without end can be changed into the end of the cancer terror. This is possible only, however, if we approach the task without any illusions and without taking in any way into account the neurotic ideologies of a sick humanity.

In a recent article,[1] one of our co-workers compared the mortality figures of biopathic diseases with those of non-biopathic diseases. These figures have such important implications that they bear repeating. They show that, while the percentage of *non-biopathic* diseases (such as pneumonia, diphtheria, etc.) showed a considerable decline between 1921 and 1940, the percentage figures for the *biopathic* diseases (insanity, cardiovascular disease, cancer, suicide, criminality, etc.) increased considerably during the same period:

Deaths, chief causes, New York State per 100,000 population

	NON-BIOPATHIC DISEASES					
	Pulm.	*Tuberc.*	*Pneumonia*		*Diphtheria*	
Year	D.	Rate	D.	%	D.	%
1921	9,503	88.6	10,645	99.3	1,702	15.9
1925	9,162	78.9	13,571	116.8	1,001	8.6
1930	8,146	64.6	12,908	102.4	656	5.3
1935	6,847	52.4	11,018	84.4	102	0.8
1940	5,793	42.9	6,143	45.5	15	.01

[1] *Cf.* Wm. F. Thorburn, "Mechanistic medicine and the biopathies." *International Journal of Sex-economy and Orgone Research* 1, 1942, 257-258.

BIOPATHIC DISEASES

Year	*Cardiovascular* Number	%	*Cancer* Number	%
1921	36,594	341.4	11,163	104.1
1925	43,370	373.3	13,201	113.6
1930	48,487	384.5	15,144	121.8
1935	55,109	422.1	18,600	142.5
1940	64,987	481.3	21,384	158.4

Insane in New York State

Year	Males	Females	Total	% per 100,000 Pop.
1920	19,515	21,265	40,780	390.0
1925	22,667	23,858	46,525	413.6
1930	28,674	27,737	56,411	444.0
1935	36,124	33,943	70,067	493.0
1941	45,870	43,393	89,263	664.2

Convictions for Crime

1920	40,691
1925	77,202
1930	175,530
1935	363,743
1940	1,155,986

Suicides

	Number	%
1920	1,442	13.5
1925	1,664	14.3
1930	2,135	17.2
1935	2,180	16.7
1941	2,188	16.2

These figures show not only that the biopathies are *fundamentally* different from the non-biopathic diseases, but also that they are *not understood*. Mechanistic medicine, lacking a sex-economic orientation, has no access to the biopathies. *Biopathies are diseases due to disturbances of the biological pulsation of the autonomic life apparatus.* They have essentially a *social* causation and are, basically, diseases resulting from *sexual stasis*. Their chief characteristic is the disturbed economy of the biological energy, in brief, *orgastic impotence*, which makes biologically correct pulsation of the autonomic system impossible and thus reduces the orgonotic potency of the organism. Their frequency is steadily increasing.[2] The situation is alarming and calls for study as well as for relief.

Sex-economy and orgone biophysics offer some important insights which can be of help here. Not in the way in which one might like to think of it: we have not discovered some chemical cure-all which, if used on a mass scale, would suddenly wipe the scourges of the biopathies from the face of the earth. It is far from being that simple. The fight against the biopathies will be one of the most arduous tasks with which humanity was ever confronted. I do not hesitate to contend that no previous revolution nor such achievements as the conquest of the plagues of the Middle-Ages can compare with this task in magnitude, depth and danger. The solution of this task will probably require the greatest revolution in thought and action which man has ever had to achieve. Obviously, it will not be the achievement of individuals, but of *society*.

The biopathies are an endemic disease of the population of the earth. The statistics just cited speak an unequivocal language. We cannot entertain the hope that the elimination of the biopathies will take place rapidly, easily or without dangers; the necessary knowledge is still lacking, or, to the extent to which it exists, it is not sufficiently organized, and there are all too many deeply rooted erroneous doctrines. We are only at the beginning of our insights into the gigantic disaster under which humanity has been suffering for thousands of years and to which at present it seems almost to succumb. This disaster cannot be comprehended, and even less, mastered, by placebos, ideas, political slogans, or by prayers. On the contrary, all and any of these things

[2] *Translator's note:* The *fact* of this increase of certain diseases has been obvious for some time past to such groups as insurance companies, internists and psychosomatically interested psychiatrists. Indeed, it has been pointed out in the literature of the past ten years with an impotent and bewildered repetitiousness and emphasis. But the best "explanations" offered were the "high pressure of modern city living" or this or that unconscious "conflict" or "complex." The reason why it has never been *understood* is obvious from the above.—T. P. W.

will only deepen it. The first prerequisites are: to adhere to insights which have been gained; to develop and protect truth under *all circumstances;* the courage to comprehend the gigantic magnitude of the social misery; and confidence in natural living functioning. It is an essential part of this misery that the natural living does not get its due, that it is feared and always suppressed. And yet, it is the only real hope. *And it is based on the natural sexual function of the animal species "man."* There is no escape from this fact, and it is good that there is no longer any escape from it.

The chief of the Theresienhospital in Düsseldorf, Lönne,[3] said in 1937: "We have to reckon with the fact that in Germany about 15,000 women a year die of cancer of the uterus and the vagina and about 3,500 or 4,000 of cancer of the breast. In more than 12,000 of the 15,000, it is a cancer of the cervix of the uterus . . ."

The frequency of cancer of the genital organs and the breasts far exceeds the frequency of cancer in the other organs. That alone points unmistakably to the *sex*-biopathic nature of cancer. Taken in conjunction with the prevailing sexual frigidity in women, these cancer statistics only express what sex-economic clinical experience has taught us long since about the disturbances of the sexual function. But what interests us here is exactly the link between sexual pathology and cancer statistics. It shows an important fact: *The local cancer affection is a result of a disturbed sex-economy of the organism.* Consequently, *a radical fight against cancer requires a radical change in the sexual hygiene of the total population.*

While the predilection of cancer for the *sexual* organs logically leads to conclusions which are in accordance with sex-economic principles, leading cancer specialists make less logical statements on the subject. Lönne, for example, writes *(loc. cit.):*

> Scientific cancer research of today is inclined to assume, in addition to local causes for the development of cancer, a second, general factor, weakness of the antiblastic system.[4] In our *practical* fight against

[3] Lönne, Friedrich, WIRKSAME KREBSBEKÄMPFUNG, 1937.

[4] This "antiblastic system" was only a word indicating a system, principle or function which had an effect against ("anti") the formation of tumors ("blastoma"). It never had any concrete content. In our "B-reaction," the "orgonotic potency" of the organism, it becomes concretely understandable and capable of therapeutic influencing.

> cancer we have to adhere to the theory of the *local* origin of cancer. For, if there *were* a general disease *previous* to the manifest appearance of the cancer tumor, even the best operation or the best kind of irradiation would be only a partial solution, and a dubious solution at that. In that case, physician as well as patient would lose their confidence in the curability of cancer, for we all are ignorant of any effective treatment of a possibly existent *general* disease.

Indeed a peculiar way of reasoning: If we do not know any treatment for the *general* disease (the cancer biopathy), then we must adhere to the belief of a *local* origin of cancer, or physician and patient alike would lose their confidence. We may ask, lose confidence in *what?* The confidence in an illusion, an illusion which *blocks* any approach to the understanding and the possible eradication of the cancer biopathy. This argumentation of Lönne is the same as that of many psychiatrists: they deny the social origin of sexual repression and the sex-biopathic nature of neuroses and psychoses, only because by stating these facts they would get into conflict with many social institutions and would be *compelled to answer publicly for unpopular facts.* Such behavior has nothing to do with science. It is dictated by interests of material existence, and nothing else.

The reader will now understand why I emphasized the case of a patient with cancer shrinking biopathy who had no demonstrable tumors, and why, throughout this book, the main emphasis is on the biopathic *background* and not on the local tumor.

In the literature on cancer statistics the contention is made that the statistical increase in cancer mortality during the past decades is an artifact, due to better diagnosis. In the interest of the hereditary theory of cancer such facts are denied as that primitive peoples with a relatively natural sex life are relatively free from cancer and that the increase in the mortality figures represents an *actual increase* of cancer morbidity.

The following is a statistical table of cancer mortality in Norway from 1853 to 1925 (according to Gade):

Year	Cancer deaths per 100,000 population	Number of physicians in the country	Percentage of death certificates made out by physicians
1853	7	295	20.4
1860	12	330	28.8
1870	27	410	38.5
1880	42	551	50.0
1890	58	658	55.4
1900	91	1,066	82.7
1910	93	1,117	88.3
1920	105	1,281	92.4
1925	118	1,496	98.5

The interpretation of such figures by the heredity theorists is to be understood on the following basis: The theory of heredity does not recognize any effects of the social environment. The theory of the heredity of acquired characteristics, although correct, still is not recognized. There is every reason to doubt the rational and scientific character of the theory of heredity. On the other hand, there can be no doubt that in all considerations of heredity there is a strong emotional element at work. The irrational function of the mystical theory of heredity is that of excluding the influence of the social environment, thus giving the inherited characteristics a supernatural, eternal quality. According to this concept, all hereditary diseases are determined once and for all by hereditary factors and are therefore inaccessible. According to such a concept, any changes in the social environment are superfluous; cancer is seen even in plants and animals, that is, quite generally in nature, and there is no difference between primitive peoples who live naturally and the mechanized civilized people. Cancer is considered to be due to an "embryonic malformation." On the basis of this erroneous hereditary thinking there can be no genuine increase in cancer mortality but only an artificial, apparent one. This "apparent" increase is being explained by saying that, as a result of an increase in the number of physicians and of better diagnostic methods, more cancer tumors are diagnosed than previously.

The hidden meaning of all these hereditary arguments is the

attempt to save the erroneous theory of the rigid hereditary factors from being destroyed by the functional theory of the interaction between plasma and environment. True, the mechanistic and metaphysical theory of heredity does not produce one single positive idea for medical control of the so-called hereditary diseases; true, such thinking leads in a straight line to the mysticism of the hereditary Übermensch und Untermensch, that is, to the thinking of the emotional pest; but we should not be surprised by this, for this is the conservative function of the theory of heredity into which the work of Darwin, De Vries, Freud and others thus far has made only a dent. The theory of heredity is not a science but an ethical alibi.

For these reasons, it is difficult to evaluate such sham-statistics as the ones quoted above. While the argument of better diagnosis may be valid for older statistics, it certainly does not hold for such recent statistics as those of the years between 1921 and 1940. There has been little improvement in cancer diagnosis in this period, and yet there was, in the same period, in the State of New York, for example, an increase of cancer mortality from 104.1 to 158.4 per 100,000 population.

The argument that the increase in mortality is a statistical artifact or due to the increase in the average life expectancy, becomes invalid, furthermore, if one *does not isolate the cancer biopathy from the other biopathies*, but looks at it in connection with the parallel increase of cardiovascular biopathy, of the schizophrenias, criminality and suicide. If one does this, and if one comprehends the common sex-economic and social background of the sexual biopathies of all kinds, such formulae and alibis go up in smoke. Then we are confronted with the naked fact of the murderous effects of the emotional pestilence and of the ignorance of physicians and educators in matters of the natural sex life of children and adolescents. No sin of omission ever committed by medicine and education can compare with this mass production of sex-starvation diseases. It was not the fault of medicine or education that hundreds of thousands died of the plague or of puerperal fever. One did not know the micro-organisms which caused them. But the murderous biopathies are, in the last

Year	Cancer deaths per 100,000 population	Number of physicians in the country	Percentage of death certificates made out by physicians
1853	7	295	20.4
1860	12	330	28.8
1870	27	410	38.5
1880	42	551	50.0
1890	58	658	55.4
1900	91	1,066	82.7
1910	93	1,117	88.3
1920	105	1,281	92.4
1925	118	1,496	98.5

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analysis, socially caused by the irrational reactions of sex-pathological people. The avoidance or moralistic treatment of sexual problems is an intentional, though most frequently unconscious, attitude on the part of physicians and educators. The resistance of these social groups to the fight against the sexual biopathies proves the correctness of this statement.

As frightening as the truth of the matter is, it has its hopeful counterpart. Once one has understood that there are biopathic diseases which are at one and the same time *causes and results* of social ills, the picture becomes simpler. True, there is not any single individual who could function as "savior," as the masses of people would wish it to be. But the constant deepening of the misery will achieve what no individual could achieve: *The masses themselves, who suffer so much, biopathically and socially, will be forced to think rationally and to regain contact with their basic biological being.* This revolutionary change, most likely, is going to be one of the essential results of the emotional pestilence of the 20th century. There are already a number of unmistakable signs of this change:

Ten or twenty years ago, the sexuality of the child and the infant was taboo, in science as well as in the lay world. It no longer is to the same extent, and it will be so less and less. Sexual misery has become too obvious in its widespread occurrence. The attempts to get at the misery—still unofficial rather than official—are becoming increasingly numerous and insistent. It is as yet not part of any political program. But, for the first time in the history of humanity, the political programs themselves are being scrutinized as to their usefulness and rationality. The question is already being asked whether politics itself is not a disease of the body social. The consciousness of the natural life demands is becoming clearer and clearer, not as a demand or dream of individuals but as an achievement of society.

The reader will ask what these general social questions have to do with the cancer scourge. The answer is: everything. The main goal of this presentation is to show that cancer, as a special form of biopathy, is inseparable from the social structure of our society. More than that, cancer has remained an unsolved riddle only be-

cause neither its *sexual* nor its *social* origin has been taken into consideration. One hears the question, "What does organic pathology have to do with sociology?" One no longer asks, as one did 12 years ago in Europe, what the sexual life of the masses has to do with sociology. Here, sex-economy has fundamentally influenced thinking. Today, every progressive psychiatrist knows that sexuality and sociology cannot be treated apart from each other. The time may not be too far off when *organic pathology,* in judging a tissue lesion, will take into account its *sexual and social* causation. Man is a biosexual *and* social organism, and develops disturbances in the functioning of his tissues just as he develops disturbances in his emotional life.

Many people who know the statistics concerning the increase of cancer will have asked themselves *why* it is that cancer increases in this manner. Years ago, the psychiatrists were confronted with a similar question when they found that, compared with hysteria and compulsive symptoms, there was a steady increase of the *character neuroses.* In that case, the answer was this: Before the turn of the century, the sexual repressions and armorings were quite complete. Correspondingly, there were only circumscribed severe break-throughs of neurotic symptoms, such as hysterical attacks. At that time, the completely armored individual was the "normal individual." Since that time, the sexual demands have broken through more and more, asking to be recognized and to be gratified. The circumscribed symptom neuroses were more and more replaced by the general character neurosis: *increased vital demands came into conflict with old, rigid forms of life, with irrational dogmata and inner neurotic inhibitions.*

The prevention of the biopathies, cancer included, leads back to the cardinal problem of sexual mass hygiene: *the sexual problem of children and adolescents.* The conflict of the adolescent of our times is greater and more acute than that of the adolescent of 1890. The adolescent of 50 years ago was resigned. The adolescent of today is *demanding,* and rightly so.

After the first world war, parents and authorities were horrified when youths of 18 to 20 of both sexes went on trips unchaperoned. "Bobbed hair" and "a job" were considered signs of moral degen-

eration among girls. Chaos and the end of the world seemed in sight. Lindsey lost his position because he understood the struggle for a love life among the 18-year-olds, even though he did not approve of it. Now we had the second world war. Now the 14- and 15-year-olds are about to fight for their sexual rights. Since nobody helps them, since they are threatened from all sides and since, in spite of their physical maturity, they are not structurally mature, this change takes place in chaotic forms which makes society call out the police. In another 20 years, the love life of adolescents will be as much a matter of course as is today that of the unmarried 20-year-olds, or the bobbed hair and the working of the girls. Twenty years ago, nobody would have dared to propose sexual enlightenment in the schools. Today there is a violent fight on for it. In still another twenty years, the 15-year-olds will have won their natural sexual rights, and the children *under* 14 will enter the arena. Again, blindness and prejudice will do incalculable harm, instead of the children being helped. But finally the children will win out. One can only wish that this revolution in the life of our children might come into the hands of *healthy* physicians and educators instead of remaining in the hands of reactionary bodies, that it would be carried out in a *positive* instead of a destructive way.

What must be achieved is that so-called public opinion cease to hobble along far behind revolutionary happenings, still adhering to outmoded beliefs and methods. Unless the educators, physicians and social workers, on the contrary, have the courage to be ahead of the happenings and to create the prerequisites for a natural and gratifying love life (instead of sexual criminality, perversions and pornography), the chaos and mass misery will only be all the greater. As long as adolescents are treated as criminals and psychopaths merely because they follow their natural need for love, the problem of "juvenile delinquency" will continue to grow and will remain insoluble. Sexual criminality cannot be vanquished by compulsive morality, but only by the generous opening of all possibilities for natural satisfaction in love. Compulsive morality and sexual criminality are functionally identical; they create each other. It is to be hoped and expected that the institutions which are based on sexual suppression will bow to the events. It is to be hoped that those who are lost and resigned will not interfere when healthy physicians and educators will help youth. *Youth itself will, from its own organizations, create the responsible organs, which will, in a self-regulatory manner, solve the social and sexual problems of youth.*

Here, and only here, is the avenue of approach to an attack on the biopathies, be they criminality, mental disease, hypertension or cancer. *Organisms which are being made conscious of their sexual needs by the social development of new forms of life but lack the means of discharging their sexual energy in full natural gratification, must of necessity become disorganized, must fall ill biopathically, become antisocial or criminal.* That this is actually occurring is a tremendous *advance*, even though it is *painful* and momentarily *dangerous*. To fight against it means only to increase the existing misery or to create new misery.

Of course the reactionary and mystic will find proof in this of the dangers of "immorality" and will ask for a return to the old, resigned way of living. In fact, they do it all the time; but they have nothing positive to contribute to the problem of human suffering. No matter what they say: Biosocial development cannot be turned back. All that can be done is to let the development take place in less painful and less dangerous ways.

What applies to the increase in biopathies in general also applies to the cancer biopathy. The total social development has begun to replace the old ways of sexual living by new ones. Around the turn of the century, a woman of 35 was a matron. Today she is a young woman expecting to get a great deal out of life. The same is true of the man of 40 or 50. But medicine and education have not kept pace with this social development. *People's structural capacity to achieve fulfilment in life remains far behind their knowledge and their needs. Therefore, the stasis of biological energy in the human organism is far greater than it was 20 or 40 years ago.* A frigid woman of 1900, who stayed at home doing her housework, did not have a job and no outside contacts with men, was much less endangered than she is today, where she takes an increasing part in social life. She does so as a result of industrial

development as well as a result of the present war. No doubt we will have to expect even far more revolutionary changes in the life of the woman. Nobody—except Fascists—will demand her return "to the hearth." And even fascism becomes impotent here.

If, now, the human organism is exposed to an ever greater differential between life demands and possibilities of gratification, it is clear that the *stasis of the biological energy increases* in the same proportion. The greater the stasis the more severe the damage, emotional and physical, to the organism. Cancer is the most significant somatic expression of the biophysiological effect of sexual stasis, schizophrenia the most significant emotional expression. It is not by accident, but entirely logical, that Massachusetts, that state which, in the middle of the 20th century, has the most stringent laws against contraception, and enforces them, also has one of the highest cancer death rates of any state in the country.[5] Society will have to learn to take cancer as a sex-starvation disease seriously.

The tremendous increase of the biopathies, then, is the simple expression of the discrepancy between the will to a sexual life and the incapacity for a sexual life. The will to life has increased tremendously but the capacity for life (sexual potency, responsibility, self-regulation, etc.) has not grown. The way out of this dilemma cannot be renewed suppression of the will to life, but only *the establishment of a structural capacity for life which keeps pace with the life demands.* This is primarily a social and educational task. Medicine can play only a mediating role here. It goes without saying that the establishment of the full capacity for life and pleasure will require the elimination of age-old institutions and laws which are at variance with it. If, then, adolescents establish *natural, satisfactory* love relationships *before* reaching the "legal" age, and there is, at the same time, an age-old law which exposes them to the reform school, that is, to antisociality—then it is the age-old law, and not the natural sexuality of the adolescents, which has to be eliminated. This one example will show anybody with what reactionary forces such an attempt will inevitably and

[5] "Whats and Whys of Cancer." Massachusetts Department of Public Health, 1939.

violently clash. But who believes that the fight for a "new world order" which is being longed for everywhere, will be fought in words, and not in terms of such concrete life problems? It is just the profound and revolutionary character of these life problems which has led our world into chaos, which urgently calls for an answer and which made it impossible for those who are calling for a new order to name the problems concretely. This new order is not going to be established by political "ideas" and phrases, but only by the *solution of concrete tasks.*

ORGONON: A PLAN FOR THE PREVENTION OF CANCER

Up until the summer of 1942, I had refused to let patients keep orgone accumulators in their own homes, although the suggestion had been made by a number of friends. My refusal had various reasons. It was unclear in what form—purely from the legal standpoint—the accumulators should be released for public use. As business is not in my line, I did not want to become an entrepreneur. To leave the construction and distribution of the accumulators to business people would have meant delivering the orgone research to the very practices which today govern the pharmaceutic industry. I have neither the time nor the inclination to engage in any competitive struggle. On the other hand, I had applied for a patent, with the explicit notification to the Patent Office and all co-workers that the patent had the exclusive purpose of protecting the discovery against exploitation and profiteering. Orgone can be had like water or air and is present in infinite quantities. It is taken up by the body like air. All that is necessary to bring it to the consumer is a mechanism for *concentrating* it; this is what the accumulator does. Arrangements must be made so that even the poorest people can avail themselves of the concentrated orgone.

One will ask why I do not simply "present the world" with the discovery. I have asked myself this question. Since I personally do not care for the economic exploitation of the discovery, I could easily have enjoyed the ephemeral fame that comes from such a donation. But it is not merely a personal problem. *I have to consider the future of orgone research.* Thus far, no social in-

stitution has considered it necessary to offer our Institute that economic support which any average, or below-average, experimental work in the chemical field obtains without any difficulty. In addition, orgone research had been made to feel the narrow-mindedness and the irrationalism of the conventional officials of science. In Scandinavia, they almost succeeded in smashing it when they began to get an inkling of the fact that a dangerous opponent and competitor of mechanism and mysticism in natural science began to grow in the form of functional orgone physics. This running amok of science in Norway in 1937 and 1938 was a powerful warning. I had to rid myself of any naiveté. To expect aid from social institutions which owe their existence to the *lack* of knowledge, is fatal. Would Edison have expected material support for his construction of the incandescent bulb from the manufacturers of gas lamps? The atmospheric orgone is the electric bulb as compared with the gas lamps of the chemical drugs.

I am still impressed by the fact that Madame Curie did not have sufficient money to buy radium for her researches, that, out of commiseration, as it were, she had to be presented with radium, while at the same time the profiteers were making millions from radium. I am too familiar with the "ethics" of the business mind, and with the dependence of routine science on it, not to have learned caution and foresight.

Since, thus, selling as well as donation of the discovery were as much out of the question as its personal exploitation, there did not seem to be any possible form for the practical utilization of the orgone. As happens so often in such situations, the spontaneous course of events led to a solution. This is what I shall describe now.

Between 1940 and 1944, I enjoyed the friendship of a Maine guide, then 70 years old. I have a cabin in the Maine woods where at that time I had set up a laboratory for the study of the atmospheric orgone. Since this work cannot be carried out in New York during the summer months due to the high relative humidity, the work in orgone physics is carried out in Maine.

In February 1942, I heard from my friend's family that he was suffering from cancer of the prostate and was at a hospital for Xray treatment. The tumor had been discovered a few months

before, and in November 1941 the physicians had thought that he would not live longer than 6 months or at best a year.

This news was a hard blow. We had come close to each other when I told him about the nature of the bions. This simple man disclosed a spontaneously acquired knowledge of the living with which no academic biology or physics can compete. I asked him whether he wanted to see the life energy in the bions under the microscope. I was flabbergasted when my friend, even before looking into the microscope, gave me a correct description of the bions. For decades, he had been observing the growth of seeds and the character of the humus with the unerring instinct of somebody who has always lived close to nature. There are, he said, very small vesicles ("bubbles") everywhere. From these, everything develops that is "life." They were so small, he said, that they could not be seen with the naked eye. Yet, the moss on the rocks developed from them: the rock, always exposed to the weather, "softens up" on the surface and forms these life bubbles. He said he had often tried to talk about this with academic tourists, but had only met with a peculiar smile. Nevertheless, he said, he was sure he was right. I had to admit that he was right, for how could moss "germs" "strike root" in the rock?

When I showed him the vesicles, of which he had had an inkling, in the microscope and told him they were magnified 4000x, he felt shaken. It was, as he said, "the greatest experience of his life." He had never thought that one day it would be granted him to see these vesicles in which he had so firmly believed and of which he had always thought when he tried to imagine in a concrete form all the growth, the flowering and the fertility of the soil about him.

The first two summers, I had told him nothing about the atmospheric orgone because I was afraid it might spoil our relationship. Later it turned out that he, too, because of the same fear, had kept a well-guarded secret from me.

When I went to Maine in the summer of 1942, I found him in a cachectic condition. He had lost much weight, was stooped, hardly able to do any wark, had no appetite, and felt helpless. He knew that his days were numbered; a physician had told him so.

He admitted that he did not carry his fate lightly; that, on the contrary, he rebelled violently. He said he did not want to die, for this world of woods, mountains and lakes in which he had spent almost 70 years, was too beautiful. He could not imagine that soon he would no longer enjoy any of it. He loved his lonely woods in which he had fought hard for his existence for many decades.

The Xray treatment had alleviated his worst pains temporarily, but now they returned. He had no money, for he had always been a poor businessman. The family was desperate. Death within a short time was certain; the physicians had left no glimmer of a hope. He did not want to go back to the hospital. He had felt miserable there and had rebelled against everything. He was not only a poor businessman but also a bad patient. Living close to nature, he had had difficulty in adapting to the "values" of culture and civilization. He knew too much about nature, love and life, war and business to have developed the otherwise so highly esteemed "resignation to fate." He was deeply religious in the *good* sense of the word, but he had only contempt for the church business. For this reason he was considered in his parts a renegade, not without, however, enjoying the highest esteem and respect of his neighbors. I always felt that under the proper economic conditions he could have become an outstanding natural scientist. How many great talents are lost in this way!

When I asked him one day whether he believed in God, he said: "Of course, he is everywhere, in me and all around us. Just look over there," and he pointed across the lake to the blue against the distant mountains. "I call it *Life*, but people would laugh at me. so I don't like to talk about it." In other words, this woodsman also knew of the existence of the biological energy in the atmosphere.

For weeks now I had been deliberating with his family how it might be possible to get him to use an orgone accumulator. He was extremely suspicious of any medicine and had a good deal of stubbornness in him. Thus it was a very difficult task.

When he confided his secret to me and called the blue in the atmosphere "life," I also told him my secret. I told him that he

was right, that what he called "life" was indeed the biological energy which I had discovered and termed "orgone." I told him that one could concentrate it and make it visible in the form of lightning-like phenomena, that the Northern Lights were also a manifestation of the orgone. One night I showed him the orgone in the orgonoscope. He saw it immediately and gave a correct description, without any of the pseudoscientific compulsive doubts which our mechanistic or mystical academicians develop in the same case in order to maintain their academic dignity. We persuaded him to build an orgone accumulator himself and to try it. Very cautiously and suspiciously he went to work. It seemed to us to take far too much time, because he was getting visibly weaker. But finally the accumulator was finished. He sat in it and reported with great pleasure that he had felt a prickling sensation in his hands. But he could not be induced to use the accumulator *regularly*. Finally I found out that he kept fighting the admission that he was ill. A friendly talk availed little. Then, with a spell of bad weather, severe pains set in and he became practically unable to move; there were burning pains in the urethra and he was about to give up.

Great effort on my part and his strong will to live induced him now to use the accumulator twice a day for an hour. After a few days, the pains ceased. Microscopic examination of the urine showed disintegrating cancer cells and numerous, but immobile T-bacilli. He became able to get up, to eat with appetite and to go around. I made him promise to take it easy for at least a year, not to consider the fact that he was sick a disgrace, and to give his organism a chance to recover.

The effects of the accumulator, together with my psychotherapeutic efforts, were successful. I was able to follow this improvement over several weeks. He came to visit me in my cabin and asked me about that energy which he called "life." He had an excellent spontaneous grasp of all the things I had elaborated by experiment. When I finally returned to New York, I was convinced that he would soon stop using the accumulator regularly. But I was wrong. He became fond of the accumulator, admitted that for the time being it had saved his life and reported that he

felt much better. He no longer had any pain, gained 7 lbs. in 2 months and felt "rejuvenated." For a period, he excreted a brownish liquid, that is, destroyed tumor substance.

He died in February 1944 from a new anorgonotic attack.

He was Herman O. Templeton, the first manager of the nucleus of "Orgonon," the Orgone Institute Laboratories which are being established in Franklin County, Maine.

This I shall now briefly describe. It is as yet *only a plan.* Its realization does not depend on our Institute alone. We do not know how long it will be before the social authorities will realize the dangers to human existence of the sexual biopathies. We do not know how long the after-effects of the war will last and how long they will prevent social endeavors. At any rate, the Orgone Institute has taken several decisive steps in the direction of the prevention of the biopathies. I leave it to the reader to judge whether our efforts deserve public support. By that I mean not just recognition and praise, but *tangible* social and material support.

Templeton was the first cancer patient who had an orgone accumulator constantly in his own home. This made a great deal of difference. The patients who came to the laboratory for their orgone treatment were, every day, on their way "to the *doctor.*" Our friend was his own doctor. He could use the accumulator whenever he pleased. When he developed pain, he needed not wait for the appointed hour with the physician, he could avail himself of the orgone immediately. He did not have to travel—as he otherwise would have had to—50 miles to the physician. Instead of using the accumulator once a day, he could use it as many times as he wanted to. He had the leisure to become acquainted with the orgone, to make friends with it, as it were. The accumulator was not a piece of "laboratory equipment." The patient could show it to his friends and acquaintances, could let one or the other try it, discuss the phenomena and get his own observations confirmed. That is, he was not just the passive object of the treatment, but he was active. He learned to think about the energy which so greatly helped him and to do something with it. He became a new kind of social worker who, independent of his

physician, acquainted his own environment with the subject. Incidentally, he saved a good deal of money which otherwise would go for travel to the hospital or the physician, for drugs, etc.

These medical and social effects of the *"orgone accumulator in the home"* are the basis of the plan for Orgonon. The daughter of our patient offered spontaneously to take over the construction of the orgone accumulators. If everything goes its logical way, the demand for accumulators will in time increase considerably. A place was needed where the workshops could be set up. In order to get the place and to build the workshops we needed money. The orgone research requires very large amounts of money which we workers of the Institute cannot provide and which are provided by nobody else. Thus the small amounts that would come in from the orgone accumulators should, in time, not only cover the cost of their manufacture, but, if possible, the whole research work. When the public becomes increasingly well informed about the orgone, it will readily contribute to the orgone research. In return, it will get the contribution of the orgone accumulator to public health.

Thus, instead of selling the orgone accumulator or exploiting it, we arrived at the plan of letting it work for *the orgone research.* This is possible only in the form of a *public non-profit institution.*

The Institute has bought a piece of farm property in Maine which consists now of 250 acres and cost $7,000. Orgonon is situated at an altitude of 1,600 feet in a dry, sunny climate. Thus it lends itself excellently to experimental orgone research. As time goes on, all the biophysical work can be transferred there. It would be a great relief finally to overcome the handicap of a city laboratory crowded with instruments and apparatus. Orgonon may well become the home of orgone-physical life research which now has been wandering from country to country for fifteen years. It may be said that it deserves some quiet and permanence.

The orgone accumulators built in Orgonon remain the unsalable property of the Orgone Institute, that is, there is no private ownership either on the part of the discoverer or the consumer. Profiteering is thus excluded. The accumulator is rented from the Institute the way one rents telephones, and the consumer pays a monthly

contribution, the amount being agreed upon according to the consumer's circumstances. All income goes to the "Orgone Research Fund" which in turn pays all expenses.

On April 13th, 1945, the *Orgone Institute Research Laboratories, Inc.* were established as a non-profit institution for the United States and abroad. This Corporation handles all matters pertaining to orgone research, the medical application of the orgone energy, and the Orgone Research Fund. It is to be expected that in due time, when it will become financially independent, it will be able to handle the distribution of orgone accumulators on an international scale. At present, 1947, it directs the construction of and experimentation with orgone accumulators, in Norway under Ola Raknes, Ph.D.; in Palestine and the Near East under Walter Hoppe, M.D.; in England under a small group of biologists and physicists; in Brazil, Canada and Denmark the beginnings of serious orgone research are clearly discernable. In the U.S.A., the work is under my direction together with a score of medical orgone therapists. Here, the orgone accumulator has become a known new factor in combatting and preventing biopathic diseases.

The orgone accumulator promises to become an important or even indispensable weapon in the fight for public health. It effects a vagotonic reaction of the organism and an orgonotic charging of the blood which increase the resistance to disease. After this war, diseases of the autonomic life system, which are inaccessible to chemical treatment, will increase enormously. The orgone accumulator thus will be an indispensable weapon in the fight against diseases which consist in decreased defense functions of the organism. I do not doubt that the first reaction to the novelty and simplicity of the apparatus will be overcome.

I would like to emphasize the following: *It is not a matter of cancer* alone even though the orgone energy first proved its value in this disease. Rather, it is, quite generally, a matter of the *charging of the organism with biological energy*, something which the orgone has finally made possible.

The prevention of cancer is a task which may be postponed but

it will still be with us. The plan of our Institute for an experimental cancer prevention is based on the following: *Cancer prevention can be based only on the principle of increasing the orgonotic potency of the organism long before the development of T-bacilli or even cancer cells. It is a matter of preventing the shrinking of the life apparatus and of the progression to putrefaction.* This task has two aspects, biophysical and social.

The biophysical task consists in the direct application of orgone with the orgone accumulator. The wider, social task consists in the mastery of the sexual biopathies in children and adolescents, that is, in the elimination of those processes in the organism which lead not only to cancer, but to *any* kind of biopathy. It goes without saying that the social task is the much more comprehensive and difficult one.

In comparison with this task, the biophysical task of direct orgone application is much simpler and easier. At the start, it would be possible only on a small experimental scale, in one of two ways:

a) As more and more orgone accumulators are being used, a check is kept on the development of cancer among the orgone consumers. This will give a picture of the possibilities of cancer prevention. Of course, the emotional factor, the shrinking of the life apparatus due to resignation, is an imponderable, and can only be eliminated by the necessary social measures. Let us assume that beginning from a certain date 5,000 accumulators are in use. If, within 3 to 5 years, these 5,000 consumers should develop considerably less cancer than the control group, or no cancer at all, this part of the task would be done.

b) A district containing, say, 10,000 inhabitants would be provided with an "accumulator in every home." The incidence of cancer in this district would be checked by social workers. Comparison with other districts would, within 2 to 5 years, show definite indications as to the possibilities of a general cancer prevention.

This plan may seem phantastic to many a reader. But if it is possible to mobilize whole populations of a planet for war pur-

poses, it certainly should be possible to mobilize a district with 10,000 inhabitants for the purpose of a decisive experiment. I am fully conscious of all the circumstances which will create difficulties in such a plan. But the execution of such a plan *is* possible; it is even indispensable.

FIG. 1. Energy vesicles in earth crystals and humus.

FIG. 2. *Iron filing*, dry. About 300x.

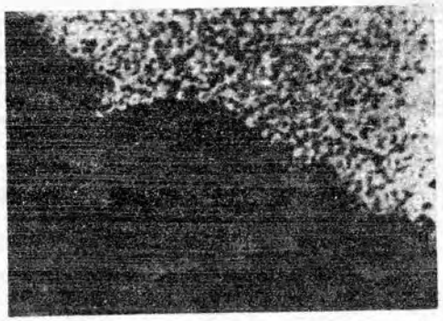


FIG. 3. *Iron filing*, after 15 minutes in bouillon + KCl. The vesicles, at first immobile, detach themselves and arrange themselves in lines corresponding to a magnetic field. About 500x.

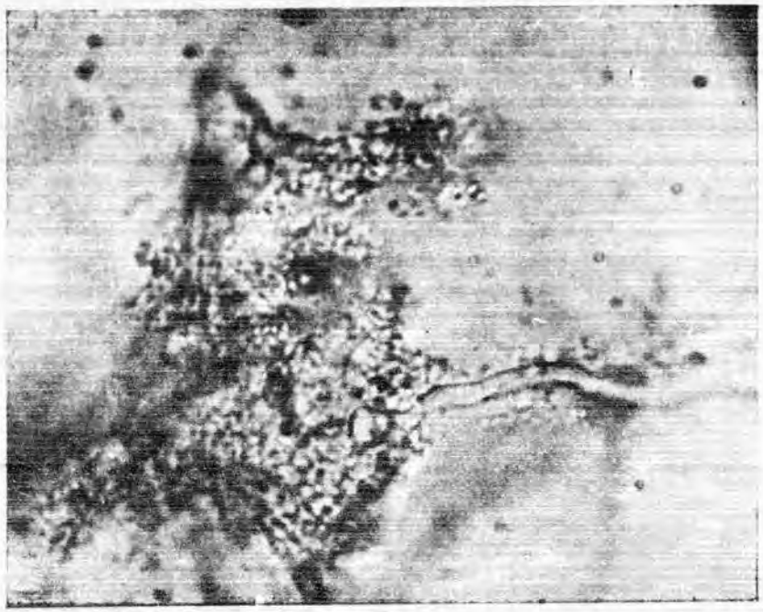


FIG. 4. Grass in a state of bionous-vesicular disintegration. From an infusion. About 700x.

FIG. 5. Bion vesicles within grass blade, showing strong blue glimmer. About 1500x.

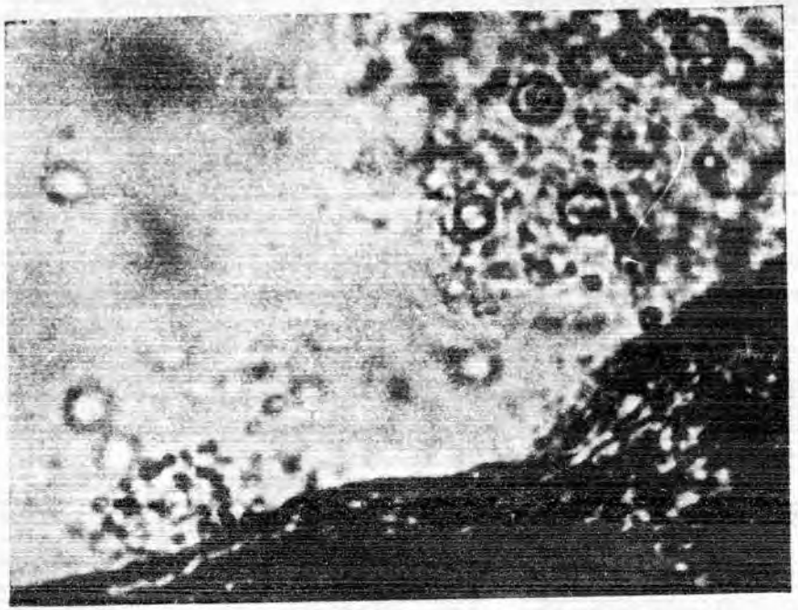


FIG. 6. A phase in the development of *ameba limax*. The protozoal germs at the upper right derive from grass which underwent swelling; each of them is developing into an ameba. At the lower left another protozoon is forming. About 1000x. Photographed with accelerated motion device.

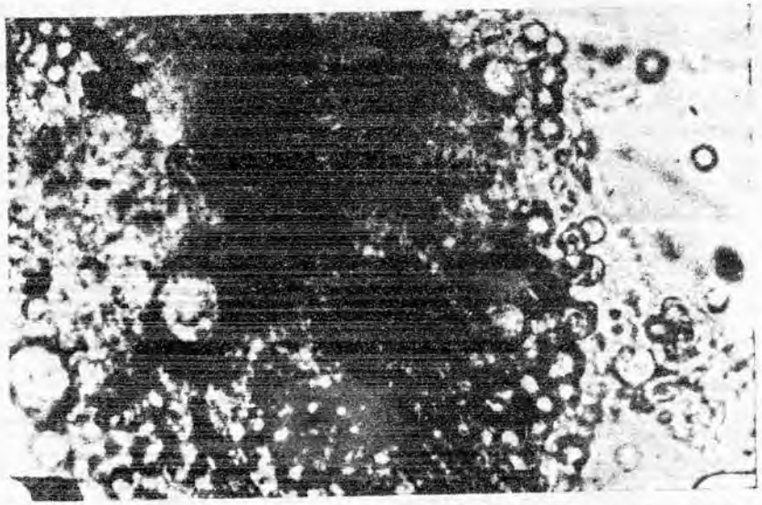


FIG. 7. A more advanced stage in the same preparation as Fig. 6. The large protozoal germs are in the process of transformation into flowing amebae. About 1000x.

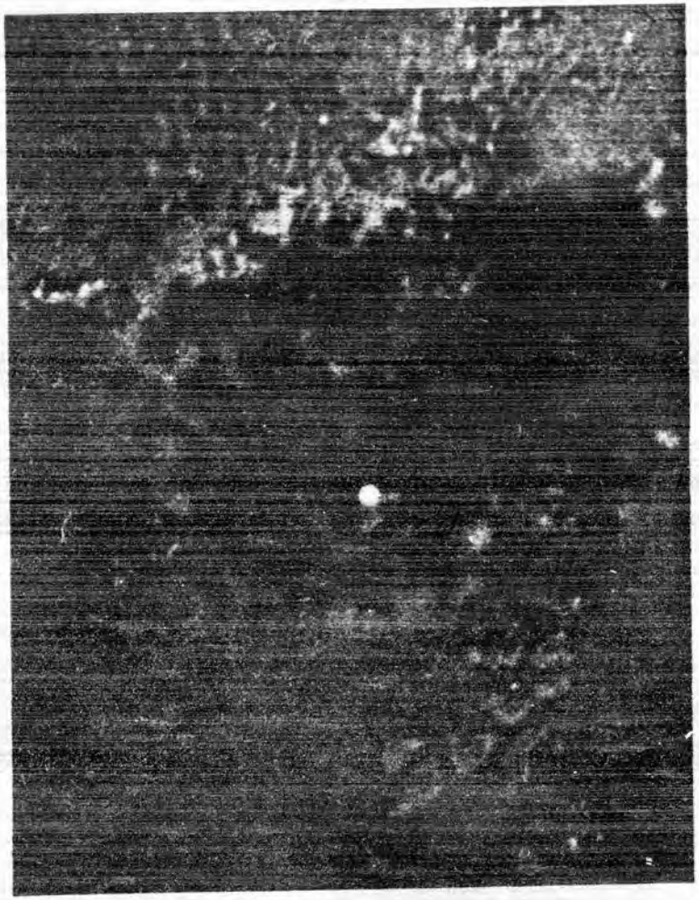


FIG. 8. Dissolving protozoal germs (at the right margin of the heaps of disintegrated grass). Amebae which are detaching themselves (at the left and top).

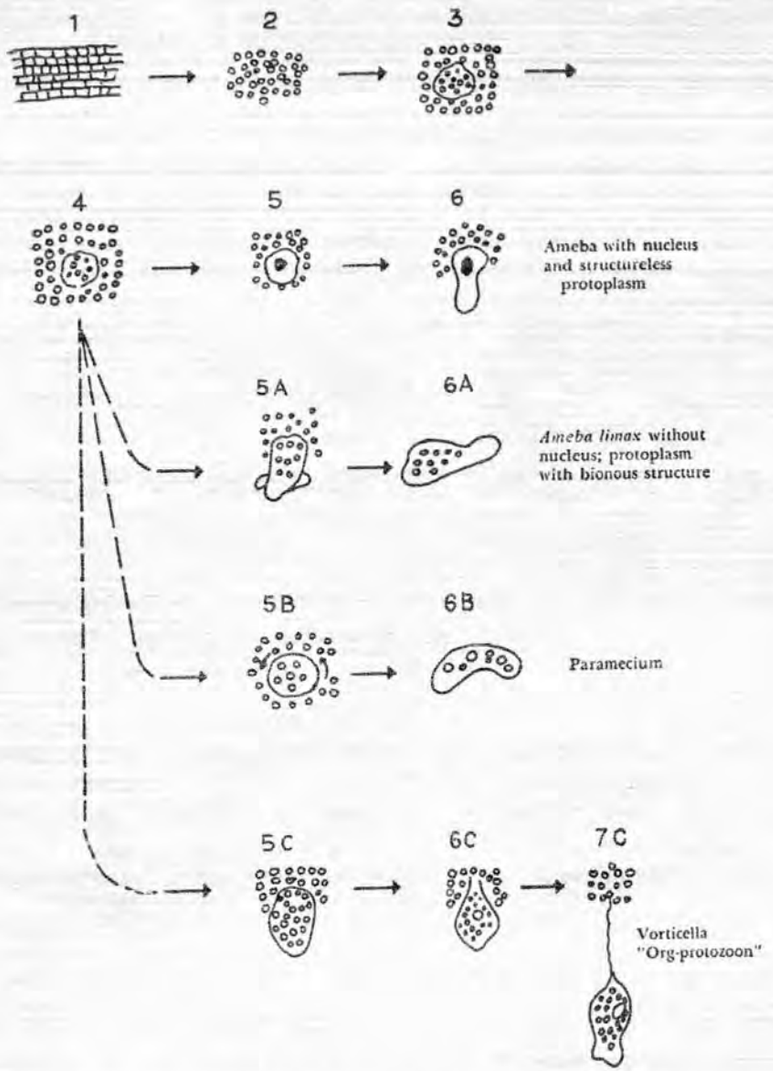


FIG. 9. Development of different protozoa from the same membranous bion heap. (1-4 = common stages of development; 5-7 = differentiation.)

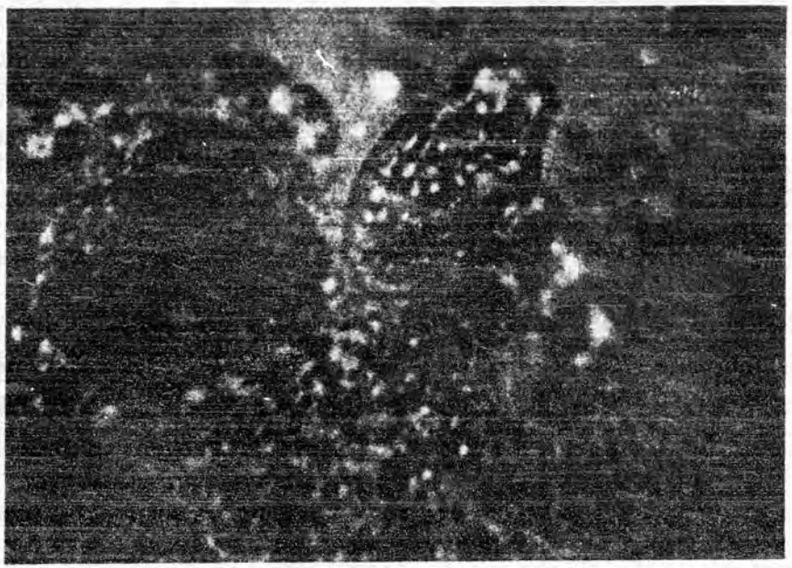


FIG. 10. Heap of bion vesicles in an advanced stage of organization.

FIG. 11. A phase in the development of a protozoon from moss.

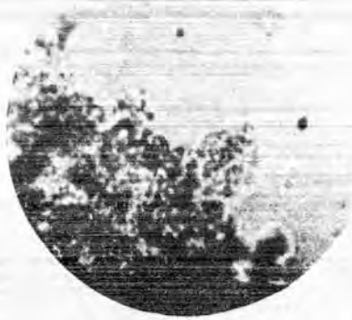


FIG. 12. Marginal formation in the process of organization. In bionously disintegrating grass. Approximately 700x.

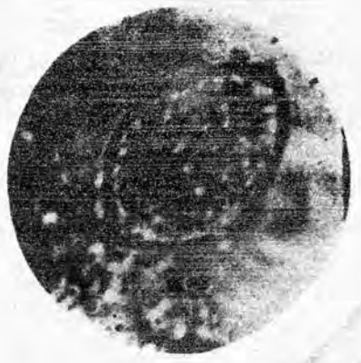


FIG. 12a. Organized heap of bion vesicles. Approximately 1500x.

FIG. 12b. Protozoal (bionous) *marginal vesicle* in disintegrated grass (dark).

FIG. 13. Completely organized protozoon ("Org-protozoon") not yet detached from the grass blade. In a state of expansion. Filmed at about 3000x. Note the bionous-vesicular structure of the protoplasm.

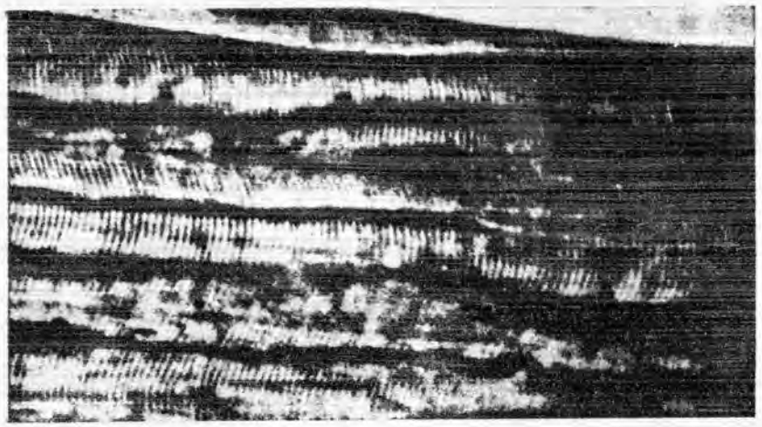


FIG. 14. *Healthy muscle tissue* (human). Striated, regular structure; no vesicles. Alive, in physiological NaCl solution. Approximately 1000x.

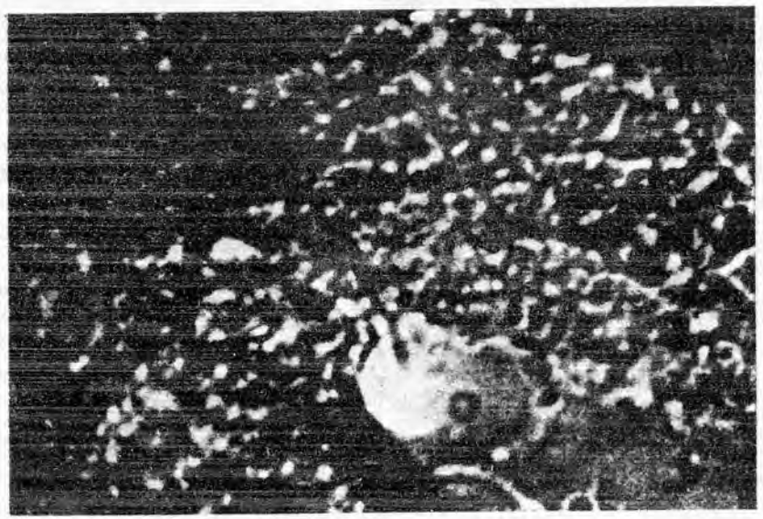


FIG. 15. *Cancerous muscle tissue* (human uterus; hysterectomy). Vesicular (bionous) structure. At the right margin, protozoal organization. Alive, in physiological NaCl solution. Approximately 1000x.

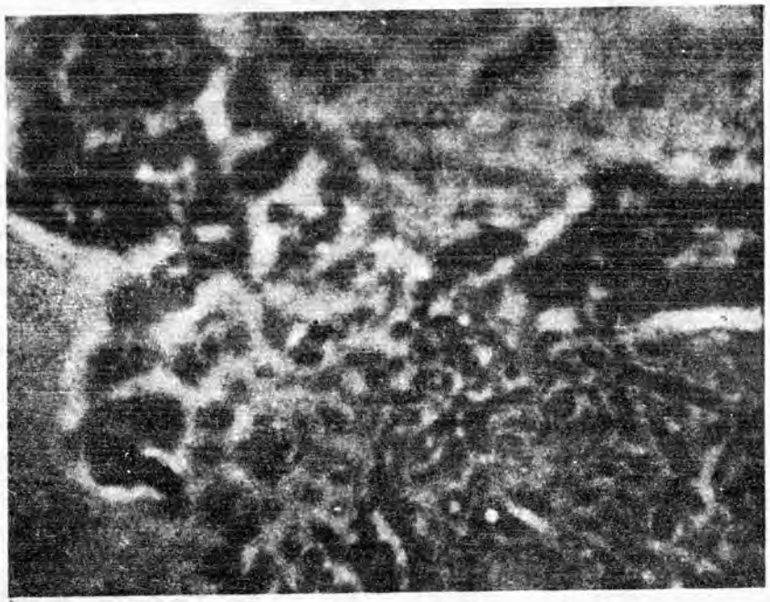


FIG. 16. *Epithelial cells from breast cancer.* Alive, in physiological NaCl solution, 1 hour after operation. Healthy, structureless epithelial cells (upper and lower right). Strip of bionously disintegrated epithelium (center of right margin toward center and from there downward). *Heaps of cancer cells in the process of formation* (left margin). Approximately 1000x.

FIG. 17a. Precancerous changes (x) in the epithelial cells of a wart; in KCl.

FIG. 17b. A proliferation (x) from an epithelial cell of the same wart.

FIG. 18. Development of strongly chromatic spindle forms (x) within an epithelial cell (arrow) from the vaginal secretion of a woman suspect of cancer (Ca II).

FIG. 19. Cancer of the fibula. Tissue with vesicular structure, containing a heap of cancer cells in an advanced stage of organization. Approximately 1000x.

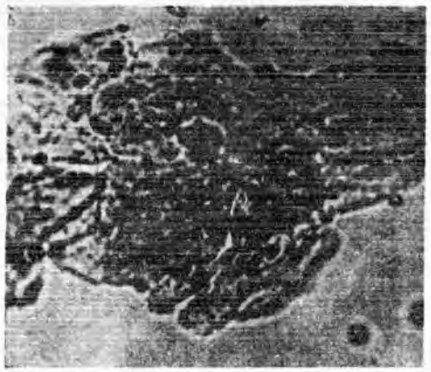


FIG. 20a. Precancerous cervix epithelium cells, with T-bodies and intensely blue vesicles.

FIG. 20b. A precancerous spindle formation (x) in cancerous cervix epithelium.

FIG. 20c. Maturing cancer cells (x) in cancerous cervix epithelium.

FIG. 20d. Isolated spindle-shaped cancer cell from vaginal secretion (Ca III).

FIG. 20A-D. EPITHELIAL CANCER CELLS IN THE PROCESS OF FORMATION.

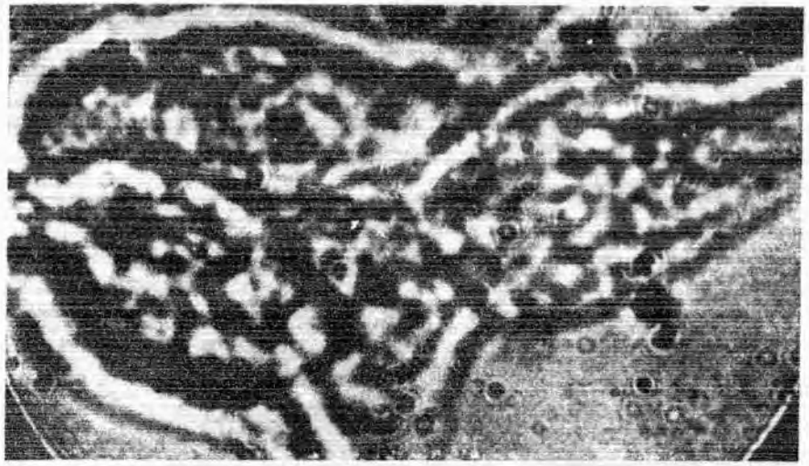


FIG. 21. Three mature cancer cells from human tumor. Filmed on 16 mm film at about 2300x, then enlarged. The club shape is typical, and an important characteristic of living cancer cells.

FIG. 22. Metastases in the subcutaneous tissue of the neck. T-mouse (Ca III).

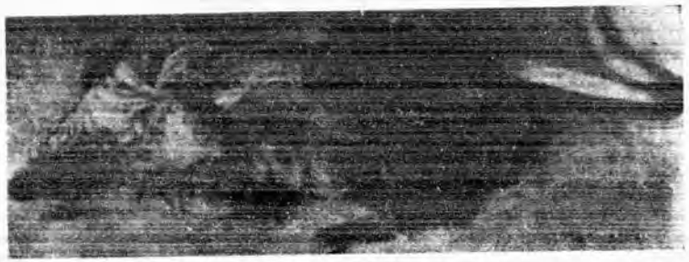


FIG. 23a. Cancer of the gluteal muscle in mouse, developed after injection of T-bacilli from disintegrated blood of healthy human (10 Ge T).

FIG. 23b. The same tumor, removed.

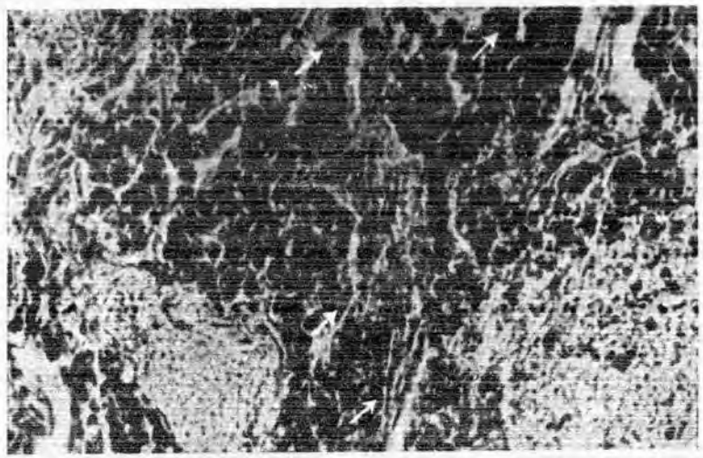


FIG. 23c. Stained section of same tumor, from the boundary between healthy muscle and tissue showing chronic inflammation. The arrows point to individual large, strongly stained cancer cells.

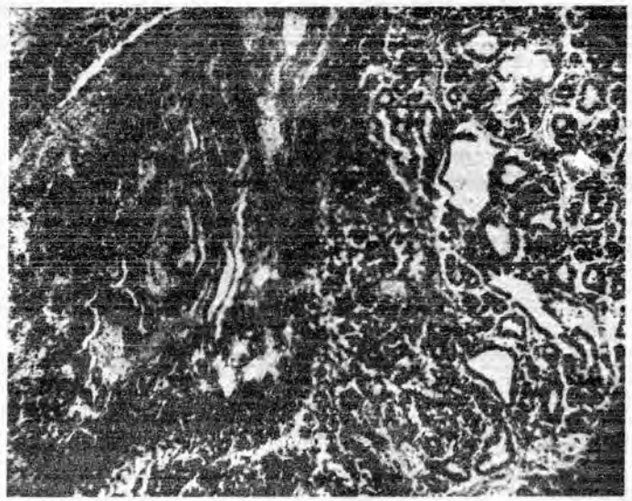


FIG. 23d. Another section of the same tumor, showing formation of cysts. Arrow points to inflammation tissue at the borderline between musculature and adenocarcinoma.

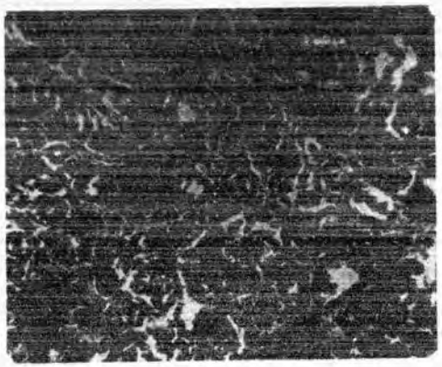


FIG. 23e. Another section of the same tumor. Fully developed adenocarcinoma in the muscle.

FIG. 24a. Cancer cell metastases in the lung of a T-mouse. Hematoxylin-eosin. Approximately 300x.

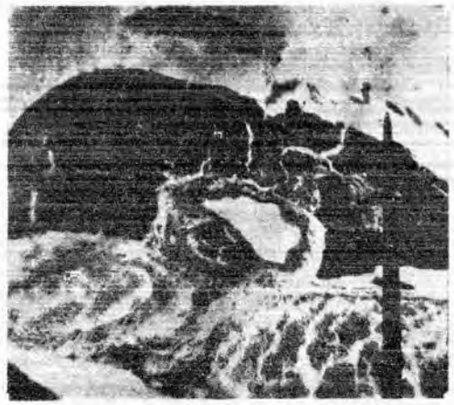


FIG. 24b. Cancer cell metastases in the subcutaneous tissue of a cancer mouse. Individual spindle cells (arrow). Hematoxylin-eosin. Approximately 300x.

FIG. 24c. The same metastatic cells in masses, free, in the peritoneum of a T-mouse. Hematoxylin-eosin. Approximately 300x.

FIG. 23A-E, AND FIG. 24A-C. EXPERIMENTAL T-BACILLI CANCER IN MICE.

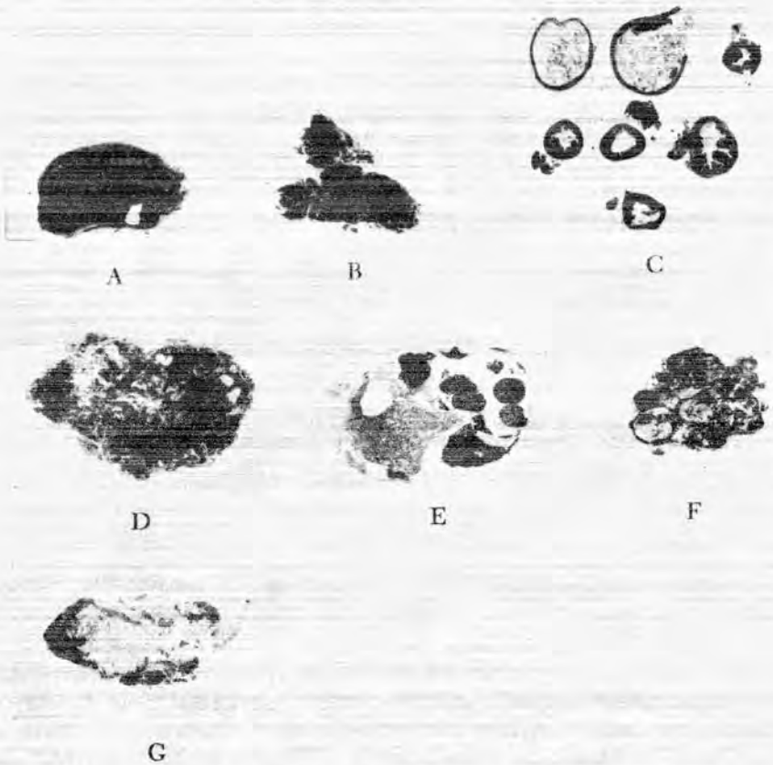


FIG. 25A-G. CANCER TUMORS IN MICE, TREATED AND UNTREATED. HEMATOXYLIN-EOSIN, 2X NATURAL SIZE.

A and B: Compact, hard, breast tumors from two untreated mice.

C: Sections from stomach and duodenum of a T-mouse (artificial cancer). Atrophic gastric mucosa; polypous cancerous growths; cancerous cell masses in the peritoneum.

D: Tumor from an untreated mouse, in the process of putrid disintegration.

E: Tumor from an orgone-treated mouse. Large, empty cavities, previously filled with blood. Detritus, consisting of dead T-bacilli (left). Substitution by connective tissue (center). Residual cancer-masses (center and right).

F: Tumor from an orgone-treated mouse. Large, empty cavities, previously filled with blood; now partly filled with cancer tissue, partly with detritus consisting of T-bacilli.

G: Tumor from an orgone-treated, cured mouse. Only little cancer tissue, disintegrated. Formation of connective tissue (lower part); sterile detritus (center).

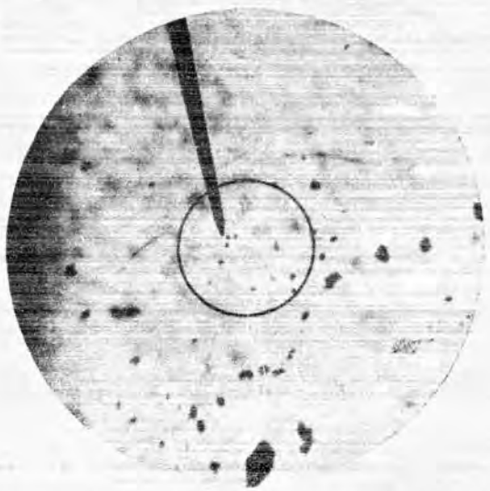


FIG. 26. Three *T-bacilli* (arrow). Gram stained (red). Present *immediately* after making a charcoal preparation. Apparent size at about 5000x; actual size less than 0.25 μ. The large black spots are fine coal dust.

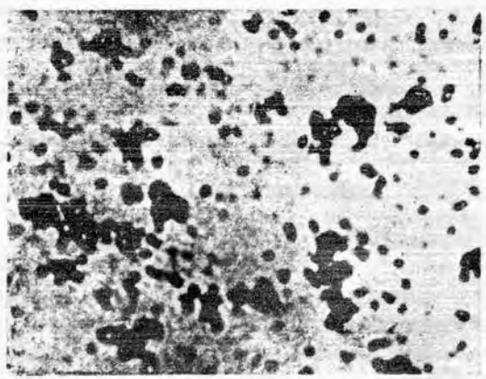


FIG. 27a. Coal bions, from coal dust heated to incandescence and made to swell in bouillon + KCl.

FIG. 27b. Cancer cell model experiment Nr. 14. Substance of egg medium penetrated by coal bions. Approximately 300x.

FIG. 27c. Same as Fig. 27b, at approximately 2000x.

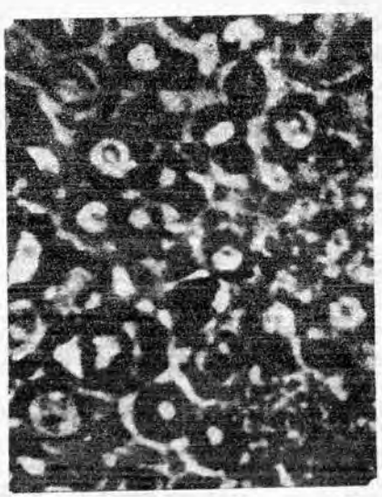


FIG. 27d. Bion cells, live (left) and Gram stained (right).

FIG. 27e. Tumor produced in a healthy mouse by the injection of these bion cells.

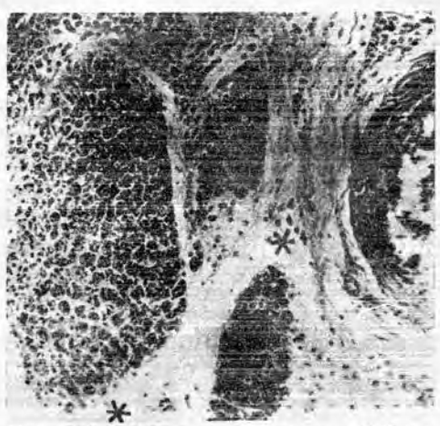


FIG. 27f. Peritoneal metastases of these bion cells. Stained section.

FIG. 27A-F. EXPERIMENTAL CHARCOAL BION CANCER.

FIG. 28a. Healthy epithelium, gastric glands, mouse.

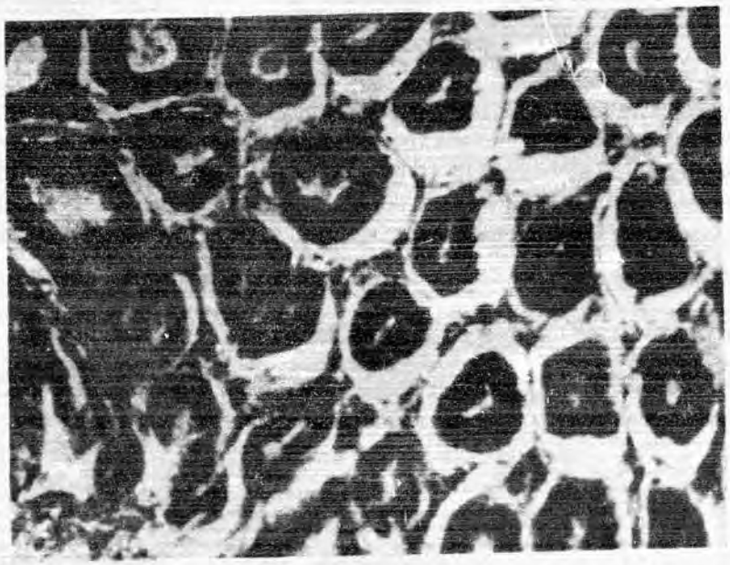


FIG. 28b. Shrinking and carcinomatous degeneration of gastric epithelium (Ca II and III). T-mouse. (Cross section.)

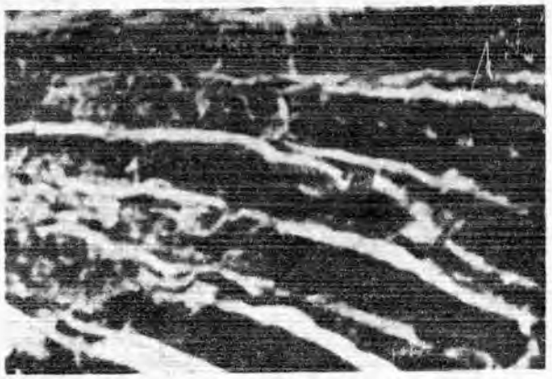


FIG. 28c. Carcinomatous changes (dark parts) in the intestinal gland cells in T-mouse, corresponding to the club-shaped formations in the living tissue (Ca II and III). Hematoxylin-eosin. (Longitudinal section.)

FIG. 28d. Putrid disintegration of gastric mucosa (CaV). T-mouse.

FIG. 28A-D. DIFFERENT STAGES IN THE FORMATION OF CANCEROUS GROWTH (CA I TO V).

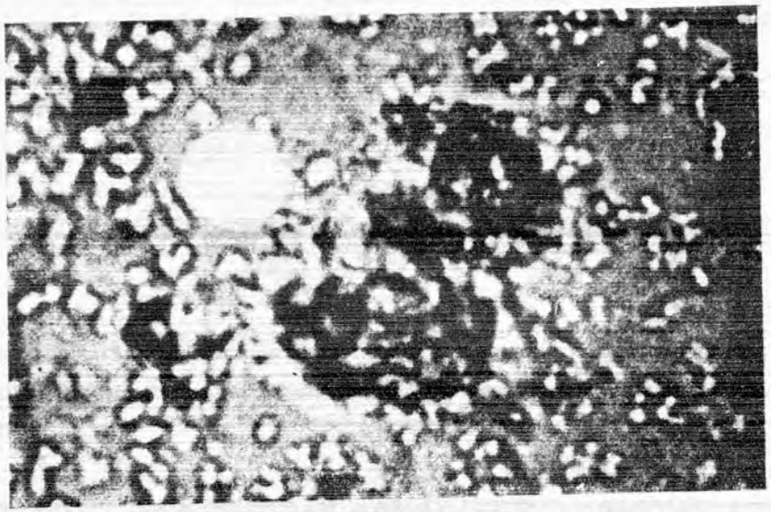


FIG. 29. Blue PA bions in the process of interpenetrating and disintegrating heaps of cancer cells (dark, center). Live preparation. Movie film.

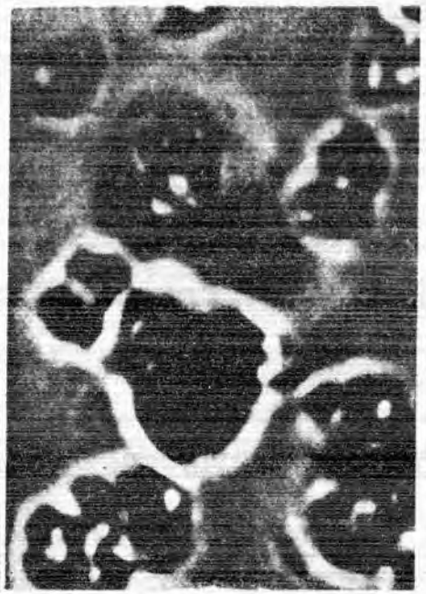
a) Blue bions. About 2 to 10 μ.

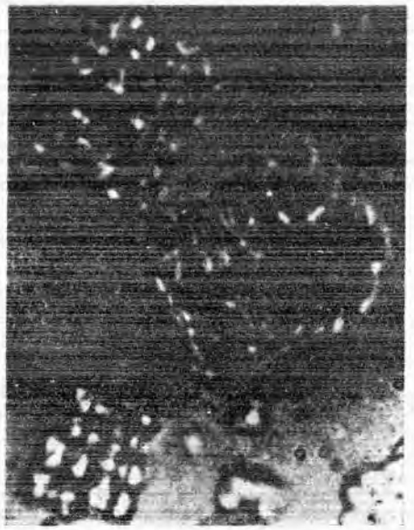
b) Staphylococci. Streptococci. Bacilli.
About 1 μ diameter. About 4 to 8 μ long.

c) T-bacilli. About 0.2 to 0.5 μ.

FIG. 30. Typical forms of blue bions, black cocci and bacilli, and T-bacilli.

FIG. 31. Culture of PA bions. Approximately 3000x.





FIGS. 32 and 33. Cultures of SAPA bions in which the orgone energy was discovered.

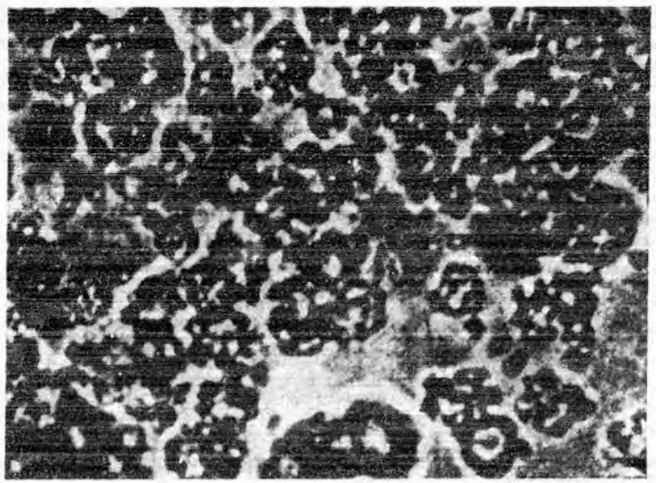


FIG. 34. Blue PA bions from autoclaved human blood. Living. About 2000x.

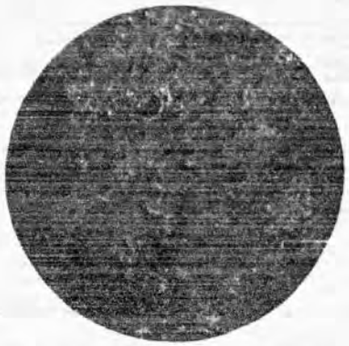


FIG. 35. T-bacilli from sarcoma. Approximately 5000x.

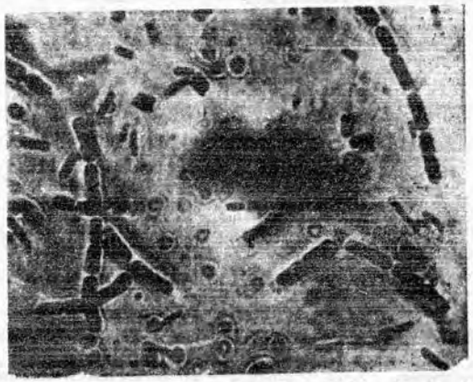


FIG. 36. For comparison: Bacilli obtained through air infection. Magnification the same as Fig. 6.

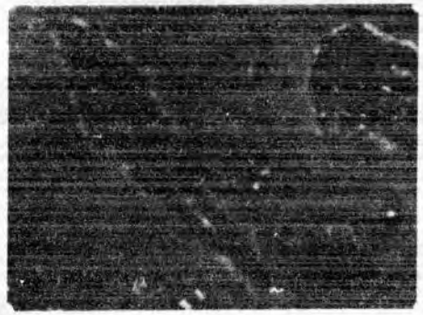


FIG. 36a. A spindle-shaped precancerous cell-formation (arrow) from vaginal secretion and a SAPA bion (upper right).

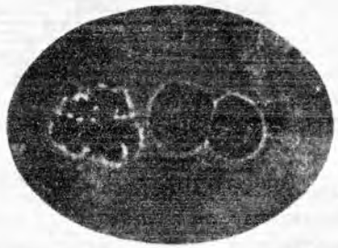


FIG. 36b. A SAPA bion has caused two ameboid, oblong, mobile cancer cells to assume spherical shape and has immobilized them.

FIGS. 36A AND B. BIONS IN CONTACT WITH CANCER CELLS.

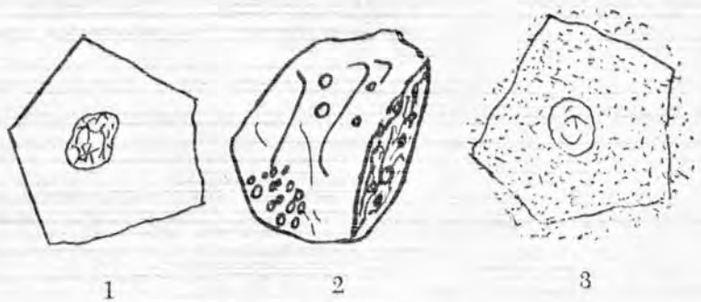


FIG. 37. Healthy and precancerous epithelial cells.

1. Healthy epithelial cell (no structure).
2. Epithelial cell disintegrating into blue bions; spindle formation with intense blue glimmer at the right margin: *precancerous stage* (Ca I).
3. Epithelial cell disintegrating into T-bacilli which are also seen outside of the cell (Ca I).

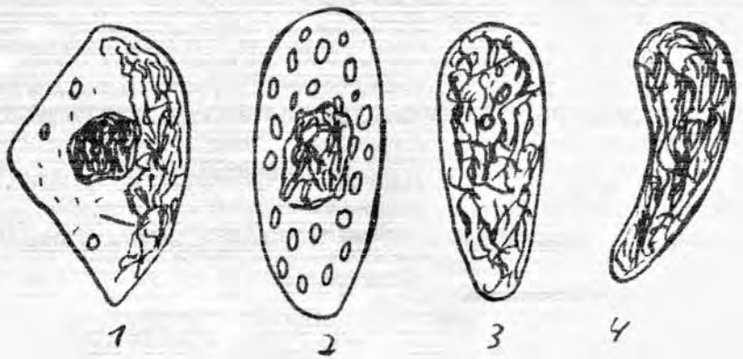
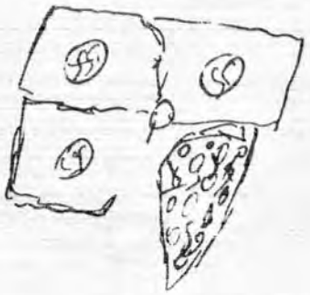


FIG. 38. Stages in the transformation of an epithelial cell into a cancer cell (Ca II).

1. Part of the cell shows a blue striated structure.
2. The cell assumes an oblong shape; blue bions develop.
3. The blue bions flow together and form a dense, striated structure.
4. The cell assumes club shape.

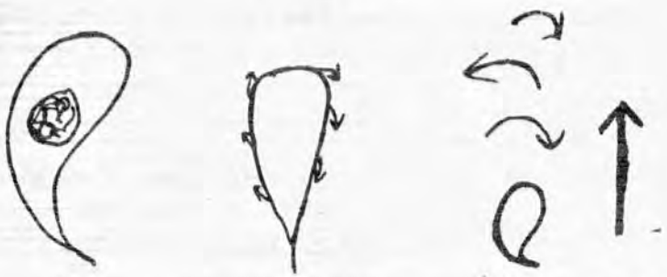
A typical form of precancerous epithelial cells.



Four epithelial cells, one of them cancerous. From the renal tubule of a T-mouse. Drawn from life.

Various forms of cancer cells, as found in mice with spontaneous tumors and with tumors produced by the injection of T-bacilli.

FIG. 39. Cancer cells in the stage of maturing (Ca. III).



Alive. The arrows indicate the jerk-like movements of the plasm. The large arrow indicates the direction of movement of the total cell.

Dead. Assumption of spherical shape and disintegration.

FIG. 40. Forms of mature, ameboid cancer cells from T-mice (Ca IV).

FIGS. 37-40. TYPICAL PRECANCEROUS AND CANCEROUS CELL FORMATIONS.

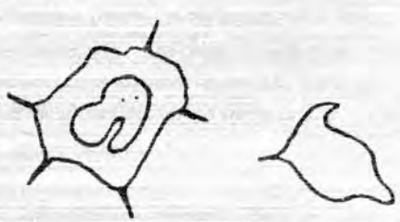


FIG. 41. Deformed erythrocytes as seen in the blood of advanced cancer patients. Bion formation in the center, T-spike formation at the membrane. ("Sympathetic-cotonia" of the erythrocytes.)

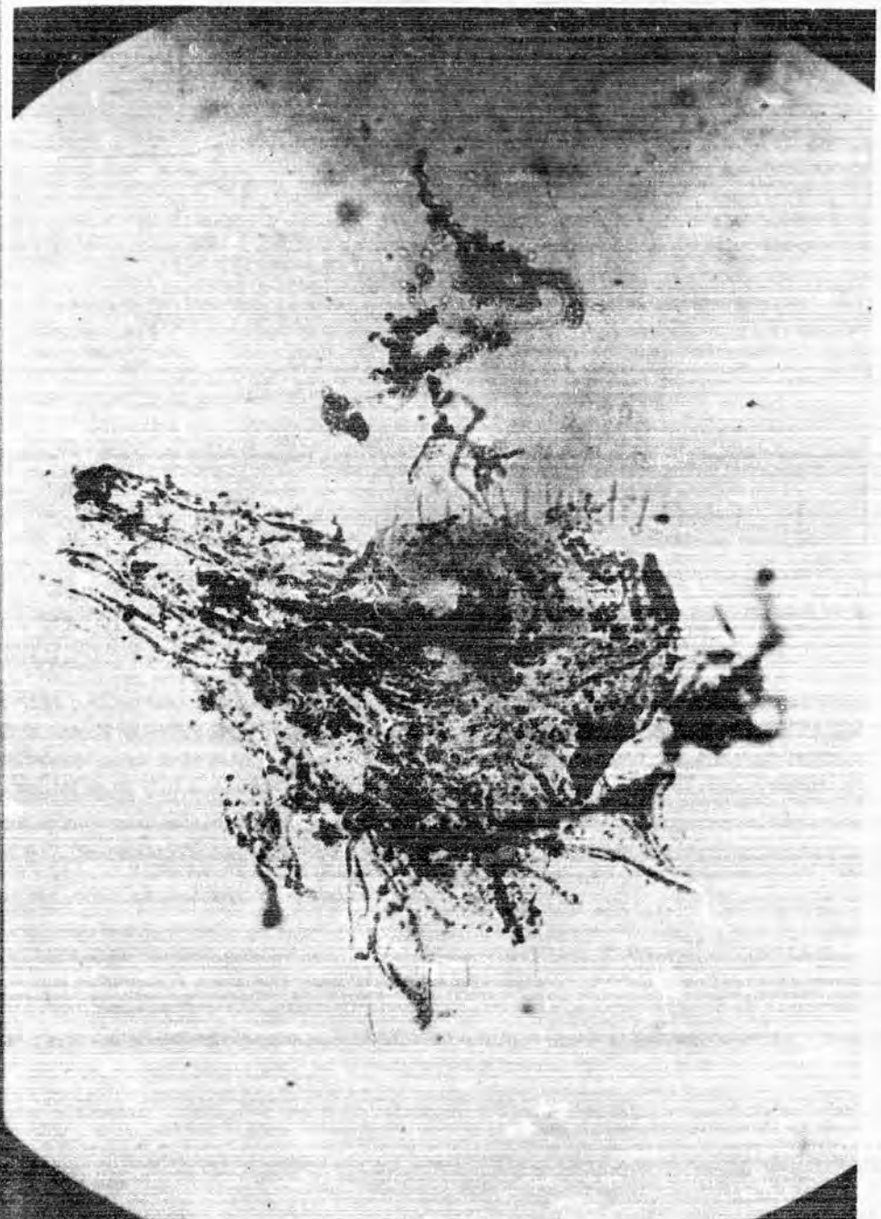


FIG. 42. Plasmatic flakes from Experiment XX.

FIG. 43. Plasmatic flakes from Experiment XX.

FIG. 44. Plasmatic flakes from Experiment XX.

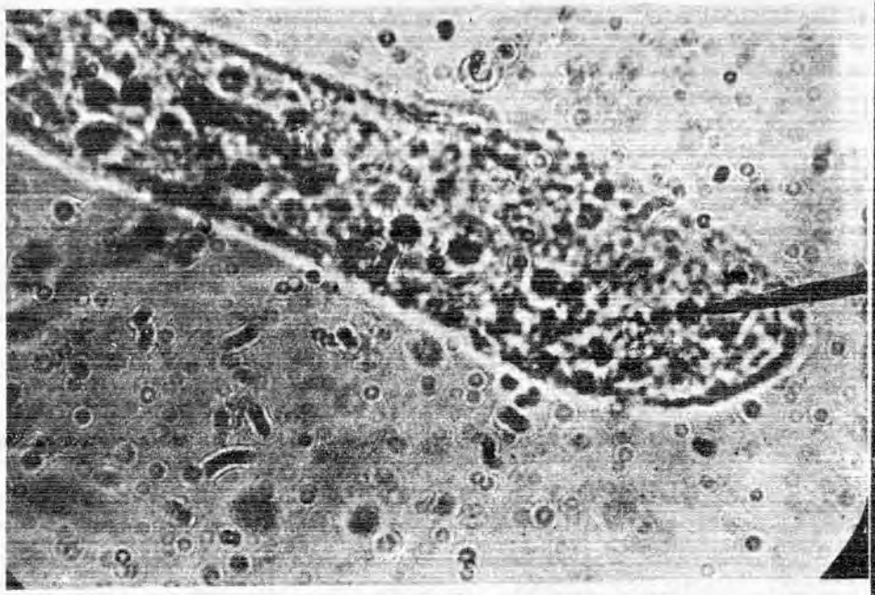


FIG. 45. Plasmatic flakes from Experiment XX.

Fig. 46. Plasmatic flakes from Experiment XX.

FIGS. 42-46. PLASMATIC FLAKES FROM EXPERIMENT XX. 300X MICROSCOPIC MAGNIFICATION.

GLOSSARY

ORGONE. Primordial cosmic energy; universally present and demonstrable visually, thermically, electroscopically and by means of Geiger-Müller counters. In the living organism: *biological energy*. Discovered by Reich between 1936 and 1940.

ORGONOMY. The natural science of the orgone energy.

ORGONITY. The condition of containing orgone; the quantity of orgone contained.

ORGONOTIC. Qualities concerning the orgonity of a body or a condition.

ANORGONIA. The condition of diminished or lacking orgonity.

ORGONOMETRY. Quantitative orgone research.

ORGONOME.

Open: The form of a single spinning wave, viewed laterally.

Closed: An orgonometric figure obtained by bending an open orgonome in the middle and bringing together the ends. Specific form of the living organism. Prototype: egg shape. Characterized by the inequality of the two parts of the longitudinal axis, as distinguished from an ellipse.

ORGONE THERAPY. The medical and pedagogical therapy which utilizes the biological functions of the orgone energy. Orgonotic biotherapy for the treatment of the biopathic disturbances of the organism. Special techniques: character-analysis, vegetotherapy and application of physical orgone energy from the atmosphere or from bionous matter to increase the natural defenses of the organism against disease.

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